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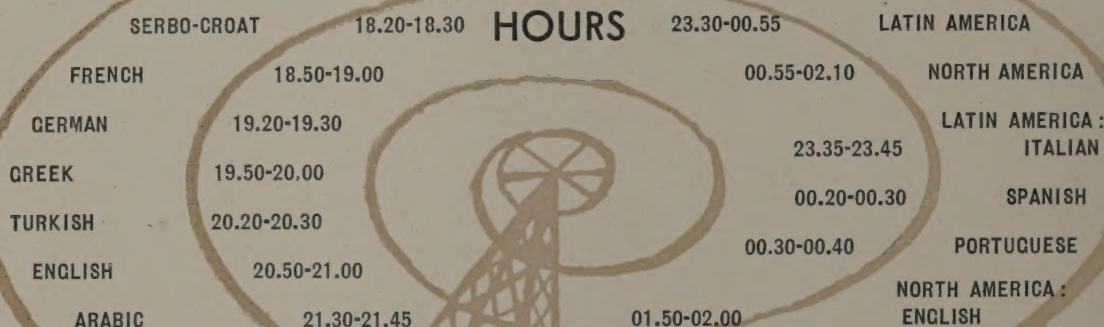
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FOOD AND AGRICULTURE

THE FAO EUROPEAN
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EXCHANGE DIFFICULTIES AND THEIR EFFECT ON FOOD AND POPULATION

by **Léon H. DUPRIEZ**

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At this time when the statesmen of most countries are contending with the serious and urgent problems involved in procuring food for the people, it may be the right moment for the economist to take a longer view of the tragic situation of the world to-day: namely, to ask himself how a continuation of the present shortages will react on the population itself, on its size and on its physical and spiritual condition; to seek an explanation for the occurrence and survival of food shortages from the standpoint of economic theory, and to determine the primary factors which tend to make this situation worse or better.

For the past century and a half, at least in those parts of the world which have benefited from continuous international relations, the interplay of economic machinery has so facilitated the sustenance of the people that government concern for ensuring supplies (namely, providing those foodstuffs requested by individuals) practically ceased. Let us not forget that merely fifteen years ago, during a most severe economic crisis, people would have been most astonished and extremely dissatisfied had their food supplies been limited for reasons which are commonly given today and which public opinion accepts without discussion. One must therefore go back to the economists of the early nineteenth century for those theories which deal with 'subsistence' and which are again of topical interest. Since there is a recurrence of the former problems of regional economy, let us re-examine the old tenets.

Classic principles

Two classic principles should be recalled at the present time: the Malthusian doctrine of population and Ricardo's theory of ground-rent contain predictions which in practice proved unsound and were therefore discredited to a certain extent.

The basis of the Malthusian theory is that when food supplies diminish, populations dwindle because of an increase in the sickness and death rate; the people reach their true physiological limit; it is not that their standard of living is inadequate compared with the usual level as other theories maintain. A useful point was made by A. Quetelet who noted that the conditions governing health and death rate became progressively worse the nearer the minimum subsistence level approached.

The incorrect interpretation of this theory was to believe that the working population would, in the course of time, make permanent or at least chronic inroads on food supplies. The settlement of new territories in the nineteenth century brought about a great improvement in the means of production and thus the proportion of agricultural work became steadily less compared to that done in other fields. While the situation remains unchanged, there is undoubtedly the social problem of individual buying power and eating habits, but there is no economic problem concerning supplies.

The 19th century solution given to the increasing food requirements implies, however, that the exchange system between nations and

continents be maintained, since populations have imperceptibly expanded beyond their food production areas and in excess of the locally available supplies. Any suspension of trade relations, therefore, forcibly raises the Malthusian problem.

Ricardo's ground-rent theory supplements this explanation: when poorer land has to be brought into cultivation and already cultivated land has to be used more intensively, then the land itself becomes more and more precious in relation to labour and capital; whereas payment for labour reaches the minimum, the value of the land increases. The universal scarcity of land benefits only the landowner. This theory holds good if land becomes scarce, but Ricardo made a mistake in thinking that land would become scarce in the near future.

Ricardo's theory would have been proved correct had the growing population of England been obliged to rely on home-grown supplies. The system of production outside the country and of international exchange agreements was responsible for upsetting this forecast. As a matter of fact, far-off lands were so rapidly claimed that European ground-rents were only maintained by agricultural protectionism.

The breaking off of international relations should, therefore, have caused land values to soar - apparently this did not happen. In actual practice, the reaction can never be so swift and the phenomenon passes unnoticed because, when events suddenly change, it is not the landowner but the tenant farmer who benefits from the increased return; this benefit derives from the length of his farming lease, his legal right to priority in buying the farm if put up for sale, and the right to pay the whole or part of his rent in kind and at official prices, etc. Apart from this, one application of Ricardo's principle, that in wartime, the countryside gets rich at the expense of the towns, is verified (cf. the extremely forcible use of this principle in the Netherlands during the first months of 1945).

Development of scarcities

The local equilibrium between population and supply not having been maintained, owing to international relations, the rupture of these

relations by war was bound to bring into play the classic principles already mentioned. These principles, however, refer explicitly to progressive *secular* developments; it is, therefore, no use wondering how these principles apply when sudden events bring them into play and cause them to disappear after a few years.

As for the Malthusian theory, war has taught that people stand their food shortages better than one might expect, in that they do not die of hunger in the literal sense, except under particularly dire circumstances. A number of adjustments inside each country, especially a return to vegetarianism, enables the inhabitants to provide themselves with a diet rather better than appears from statistics. This ability of the people to adapt themselves over short periods should not blind us to the seriousness of prolonged food shortages which strike at the heart of human vitality. Even if these shortages become less acute, their prolonged duration may be just as harmful as the first severe shortage, since they are borne by an already weakened population and may cause accidents of increasing gravity. Governments, therefore, cannot underestimate the urgency of considering optimum rather than minimum diets and of not deferring the question of food supplies to other political priorities.

Ricardo's principle of ground-rent was more rapidly substantiated than the Malthusian theory of population, but, as previously mentioned, the benefit went to the land-holder rather than to the landowner. In the long run, the proprietor would gain, as he can benefit from the scarcity of the land when he is able to dispose of it. As a matter of fact, the landowner has already been the gainer in those cases where he has been able to sell his land, at a high price. On the other hand, when agrarian reform is put into effect, the land is taken from the owner at a low price, and its scarcity value is acquired by the new holder.

When produce is sold on the free market (a relatively rare event), the cultivator gains from the scarcity value described by Ricardo. With the requisitioning and rationing system in force the reaction is more complex. The public authorities more or less effectively prevent the scarcity value occurring on the re-

quisitioned portion of the agricultural products. The shorter the rations, however, the greater the scarcity value of that portion withheld becomes. In many cases, therefore, the scarcity value on the black market thus becomes greater per unit product than it would have been on the open market.

It may be noted here that, if this gain is 'free' in that current output is benefited, the scarcity value stimulates production, at a time when this increase is vital to marketing: the total return from production is such that it is profitable to put a great deal of labour and capital into the land, and also to use progressive technical methods, in order to obtain further products, in short, to create the production conditions described by Ricardo in the event of an increase of the population. Unfortunately, agricultural production is not very flexible, even without such powerful stimulation, and therefore, the total return can only increase slightly. Very often, moreover, this extra force must be used to meet the shortages arising from war; exhaustion of the land, lack of fertilizers, destruction and wear and tear of machinery, etc. It should, therefore, merely be noted that the working of Ricardo's principle stimulates a greater agricultural production than would be possible were agricultural returns effectively limited.

With the present distribution of the world population, an intensification of national production is a slight help but no solution for the shortage of food; as in Ricardo's theory it is but a sad and inevitable necessity. We are therefore obliged to place the problem of subsistence in its true light, that of international relations in the immediate postwar period.

Renewal of international exchanges and its bearing on scarcities

At the end of the war, the immediate problem was to meet some general food shortages, *i.e.*, insufficient calorie intake and certain marked specific deficiencies; a long term remedy had to be found for specific and high quality food shortages in order to enable the people to recover their usual eating habits and even to improve them.

We will only examine the second of these problems.

In considering the development of events during the past three years and comparing it with the situation in June 1921 - the same length of time after war - the economist is led to ask himself why the return to former food standards has been so slow and why the diet in many countries is still much the same as it was during the war. Should not the restrictions, in the sense given them by Malthus and Ricardo, disappear in the face of competition? Can the tardy improvement be attributed to the slow working of government machinery, to the impossibility of obtaining adequate transport and to other material obstacles, foreign to those human reactions which are the province of political economy? Or must it be concluded that we have inadvertently upset certain spontaneous and beneficent economic reactions? And that, in this manner, the period of adjustment is prolonged to a dangerous degree? Or even that our actions have given rise to a fresh and tragic problem which did not exist in 1939?

In order to recollect the main points, the economist must first of all enquire how the economic principles have worked concerning:

1) the increase in agricultural production, particularly in those countries where it is flexible;

2) the renewal of international exchanges in so far as they apply to the distribution of food products.

Regarding this first point, it suffices to say that if the stimulation to greater production entails high and rising prices (that is to say, in actual fact, prices which are high compared to the true cost of production), most governments have been overwhelmed by other problems, principally that of avoiding unreasonable increases in prices and earnings. In many programs this latter problem has, as a matter of fact, received priority, and it has not always been understood what serious reactions an over-severe and badly thought-out price policy would have on agricultural production, resistance to requisition and, therefore, on the regular supply of rations, crop processing, and the speculative holding of stocks. In short, for reasons

of immediate price policy, of which the expediency in each particular case cannot be discussed here, the adjustment of food supplies to needs has often been delayed, and sometimes compromised. While acknowledging that a more spontaneous and freer development would have had certain inconvenient aspects, it must be admitted that it would have provided a more rapid solution to the food problem. The importance and validity of the various objectives under consideration is obviously a question of personal judgment. As events have shown, it is nevertheless reasonable to admit that the recovery of production, namely, the medium-term solution, has often been sacrificed to attempts at an orderly distribution of available stocks and to keeping prices steady. Wrong decisions taken in regard to prices and requisition may prolong scarcities indefinitely; this should be remembered and it should be made politically possible to correct rapidly any error recognized.

Whatever the errors made in the production and distribution of national foodstuffs, it is obvious that the way in which international exchanges are being re-organized will have an equal influence on the solution of the food problem; actually, so many countries have been organized for the last hundred and fifty years on the basis of food being supplied by newly settled territories that food restrictions will have to be retained so long as these exchanges remain insufficient. Animal production in densely populated countries suffers in a particularly severe manner from the lack of imported feedingstuffs. Assistance, such as that given by UNRRA can obviously only provide for the most serious cases; it cannot constitute a lasting system which must be on the basis of exchanges rather than gifts: the re-building of a balanced trade according to the principles of political economy is therefore one of the conditions by means of which provisional assistance may contribute effectively to a definitive recovery.

If the necessary conditions for an international balance of trade can be obtained, one may hope that a true solution for the food supply problem may be found as an alternative to a mere improvement which would still

involve retaining food rationing. Actually, new territories will provide the possibility of production meeting requirements, if not immediately, at least in the fairly near future.

In international relations, at the present time, the world is suffering from curious limitations of its ability to satisfy individual food needs. Only actual individual demand will be considered here, that is to say, the demand which is backed by individual buying power, the 'market' demand (the optimum demand determined by physiological needs is another problem).

Under prewar conditions, the world demand for foodstuffs was nothing more than the total of actual individual demands; these could proceed unchecked, the amount bought by each purchaser being obviously proportionate to local prices. The quantitative control of foreign trade — where it occurred — did not yet hinder meeting individual needs. In the world today, on the other hand, there is a curious limitation on the ability of individual to feed themselves in a manner proportionate to the financial means at their disposal, even though foodstuffs are available and can be produced at prices which these individuals are prepared to pay.

The reality which lies behind many rationing programs is actually the following: whereas inflation creates a big income for the inhabitants of a country, the country itself is obliged to limit its international purchases appreciably because when there is a fixed rate of exchange, this very inflation provokes a serious shortage of international resources. On account of this, the distribution of international foodstuffs has to be limited and the building up of national livestock has to be restricted. If the monetary policy allows the growth of individual demand backed by buying power, the restriction of national buying power in foreign currency will act as a deterrent and prevent the demand from becoming effective. Finally, exchange difficulties cause shortages to continue either by preventing the purchase of what is on the market or at least by relieving pressure in so far as increased production is concerned.

The present worsening of exchange difficulties threatens to give rise to a strange paradox. On the one hand, many countries cannot meet their elementary food requirements, whereas at those prices which an attempt is made to enforce (or which are enforced for limited quantities) there is a considerable individual buying power. On the other hand there is a risk that international markets may be flooded on more or less short notice, what with a supply that will probably increase with the 1948 harvests and an international demand which will become steadily less owing to government exchange restrictions. The dearth of food in what were formerly the richest countries thus threatens to develop owing to the crisis in international exchanges, a proof of delayed monetary adjustments. If this is the case, the piling up of stocks and their destruction in the producer countries will constitute a veritable economic paradox.

Thus, over and above temporary assistance and support, the food supply problem of to-day has become essentially a monetary one. In the

near future people will eat as they want to when their governments will have put currency on a sound basis, more specifically, when the domestic purchasing power will have been put on a par with the purchasing power for foreign goods at the official or free rate of exchange.

This brings us to a new paradox: in the present period of shortages it is not the stimulating factors but the monetary restrictions which bring about abundance in food supplies and the return of normal free markets. Monetary stimulants applied in a period of excessive demand for labour (incorrectly considered to be a balanced labour market situation) only increase the floating buying power and thus aggravate the shortage of currency; restrictions, on the contrary, create a more and more balanced demand for foreign currency, and one which can be met.

The truth of the classic rule concerning exchanges has already been amply proved by contemporary events; these proofs will become still more evident in the near future.

THE UTILIZATION OF FEED ENERGY BY ANIMALS

by **André M. LEROY**

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A recent article by our colleague CRASEMAN on the KELLNER theory concerning the evaluation of the effective energy of feeds in starch equivalents, prompts us to revise our knowledge of the utilization of feed energy by animals.

The concept of net energy, on which the rational feeding methods in use have been based up to date, has a definite disadvantage. In effect, the value, expressed in calories, of the unit of energy chosen by KELLNER and his followers, varies according to the extent of the production of the animals fed, and the table which accompanies the article of CRASEMAN clearly indicates this variability. The use of such an elastic unit for the evaluation of the effective energy value of a specific ration is evidently considerably open to criticism.

The explanation of this state of things can only be obtained by a detailed analysis of the energy expenditure of a normally fed animal under everyday stall conditions. Before, however, undertaking this analysis, it is just as well to recall some basic definitions.

Metabolizable energy

Metabolizable energy is calculated by subtracting from the gross energy derived from the organic substances ingested in 24 hours the heats of combustion of the feces, urine and gases emitted during the same period. Failing exact determinations, obtained by direct experiments, this quantity of metabolizable energy may be evaluated approxi-

mately in terms of the quantity of digestible organic matter contained in the ration, and the average fat content of the feed ingested. In practice, the multiplication of the quantity of digestible organic matter by a coefficient selected from the following table, furnishes fairly closely the quantity of metabolizable energy an animal pertaining to a specific breed may derive from the feed consumed.

TABLE 1.

Coefficients for calculating the metabolizable energy of a ration from its content in digestible organic matter (Calories of metabolizable energy per gm. of digestible organic matter).

Fat content of ration	Full grown ruminants	Young ruminants at weaning and pigs of all ages
2 %	3.71	4.20
4 %	3.87	4.30
6 %	3.96	4.40
8 %	4.00	4.52
10 %	4.04	4.65

Energy of basal metabolism

The energy expenditure of basal metabolism is the minimum expenditure observed after an adequate period of fasting (from 24 hours to 3 days) by an animal kept in a stall for 24 hours at a temperature which does not entail any supplementary expenditure of energy by the mechanism of thermic regulation.

Experiments showed that this expenditure was proportional to body surface and that it could be calculated in terms of live weight by means of the formula: $E = \alpha P^x$, in which P

indicates live weight in kg., α a coefficient varying according to breed of animal, and x , an exponent with a value between 0.50 and 0.65, this value being nearer the latter figure the more spherical the body surface of the animal in question. Table 2 indicates, for the principal farm animals, the results of the experimental determinations of these quantities of energy from basal metabolism, corresponding to what we will call the basic expenditure.

TABLE 2.

Basal metabolism values, or basic expenditure per period of 24 hours (female and gelded animals).

Cattle		Sheep		Pigs	
Body weight in kg.	Basal metabolism in 24 hours	Body weight in kg.	Basal metabolism in 24 hours	Body weight in kg.	Basal metabolism in 24 hours
100	2,600 cal.	10	540 cal.	10	—
200	4,200 cal.	20	780 cal.	25	1,000 cal.
300	5,200 cal.	30	960 cal.	50	1,570 cal.
400	6,200 cal.	40	1,090 cal.	75	1,950 cal.
500	7,000 cal.	50	1,210 cal.	100	2,250 cal.
600	7,600 cal.	60	1,325 cal.	150	2,600 cal.
700	8,000 cal.	70	1,435 cal.	200	3,300 cal.
800	8,300 cal.	80	1,515 cal.	250	3,350 cal.

Production energy

When the requirements of basal metabolism are met, the supplementary utilizable energy, if any, may be transformed either into growth or fat tissue, or for milk production or mechanical work partly utilizable in farm operations. The quantities of energy corresponding to growth, fattening or milk production can easily be calculated from the data in the following table.

TABLE 3.

(A) *Energy value of growth or fattening tissue per kg. gain in live weight.*

Animals being weaned	2,000 to 2,800 cal.
One-year old animals, intended for breeding	3,000 to 4,500 cal.
Animals at onset of fattening	6,000 to 7,000 cal.
Animals at end of fattening	7,000 to 8,500 cal.

(B) *Energy value of milk production per kg. of milk.*

Cow's milk, 4 per cent. butterfat . . .	750 cal.
Ewe's and sow's milk, 8 per cent. fat . .	1,250 cal.

In order to simplify this report the special case of work production will not be discussed.

Net energy

The total $E + P$ of the basal metabolism energy and the production energy should be indicated as net energy. Thus, for example, for a full grown milch cow of 600 kg. yielding 12 kg. of milk, the net energy requirement for 24 hours is $7,500 + 9,000 = 16,500$ calories; that of a wether lamb of 12 months, weighing 75 kg. and gaining 150 grams per day, would be $1,475 + 560 = 2,035$ calories.

Influence of feed consumption on energy expenditure

Even in an animal kept on maintenance rations, namely, at rest, neither gaining nor losing in weight, the energy expenditure is much higher than the basic expenditure calculated according to Table 1. On estimating, by determination of the gaseous exchange, the calorie loss of an animal on maintenance rations, the most outstanding fact is the very considerable increase in expenditure at the time of feeding. This maximum expenditure is observed from the onset in ingestion and remains at this high level for the entire duration of mastication, and consequently, the greater the quantity of dry matter consumed at the time of feeding, the greater the supplementary energy wasted by this process. The following graphs obtained from a series of experiments carried out on sheep, pigs and poultry, indicate this effect of ingested dry matter on the total calorie expenditure in 24 hours.

It may be deduced, therefore, that the metabolic expenditure of the animal at the time of feeding varies according to the number and duration of the feeds. This duration

depends on the ration, and the higher its content in crude fibre difficult to digest, the longer it is.

The following data prove that the duration of the consumption of a kilogram of dry matter by cattle varies according to the type of feed.

General equation of energy metabolism for feed animal yielding products useful to man.

Taking M as the metabolizable energy of the ration, E as the basic energy expenditure, and P the corresponding quantity of energy,

GRAPH 1

Abcissae: hours from 00 to 2400

Ordinates: $\frac{M}{E}$ values, i.e., ratio of hourly metabolism M , to corresponding basic expenditure E .

$\frac{M}{E}$ a = morning feed
b = evening feed

$\frac{M}{E}$ a = morning feed
b = evening feed

$\frac{M}{E}$ a = morning feed b = midday
feed c = evening feed

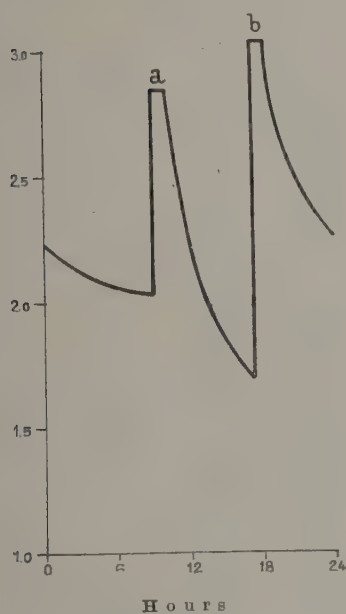


FIG. 1.
53 kg. ewe given two feeds per day
(ration of hay and ground cereals)
 $K = 2.28$

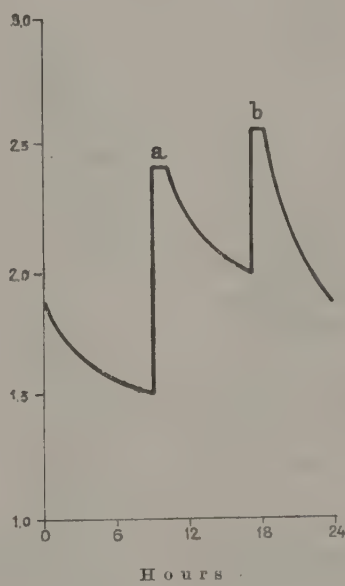


FIG. 2.
65 kg. pig given two feeds per day
(ration of bran and ground cereals)
 $K = 1.99$

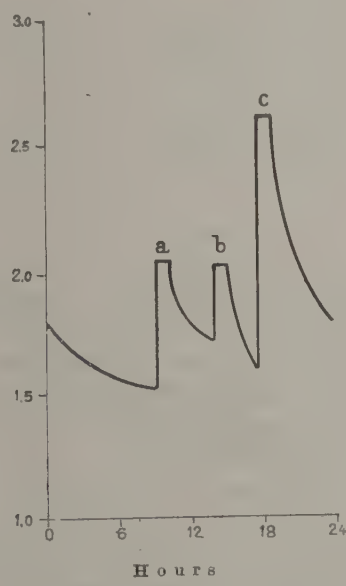


FIG. 3.
1700 gm. chicken given three feeds per day
(ration of whole and ground cereals)
 $K = 1.87$

TABLE 4.

Duration of feed consumption per kg.
of dry matter (cattle).

Feed	Average crude fibre content per kg. of dry matter	Duration of consumption per kg. of dry matter
Straw	40 %	about one hour
Hay	30 %	about 45 minutes
Concentrated feed in cake form . .	4 %	about 5 minutes

for growth or milk production, the following equation may be supposed:

$$M = E \times k + P$$

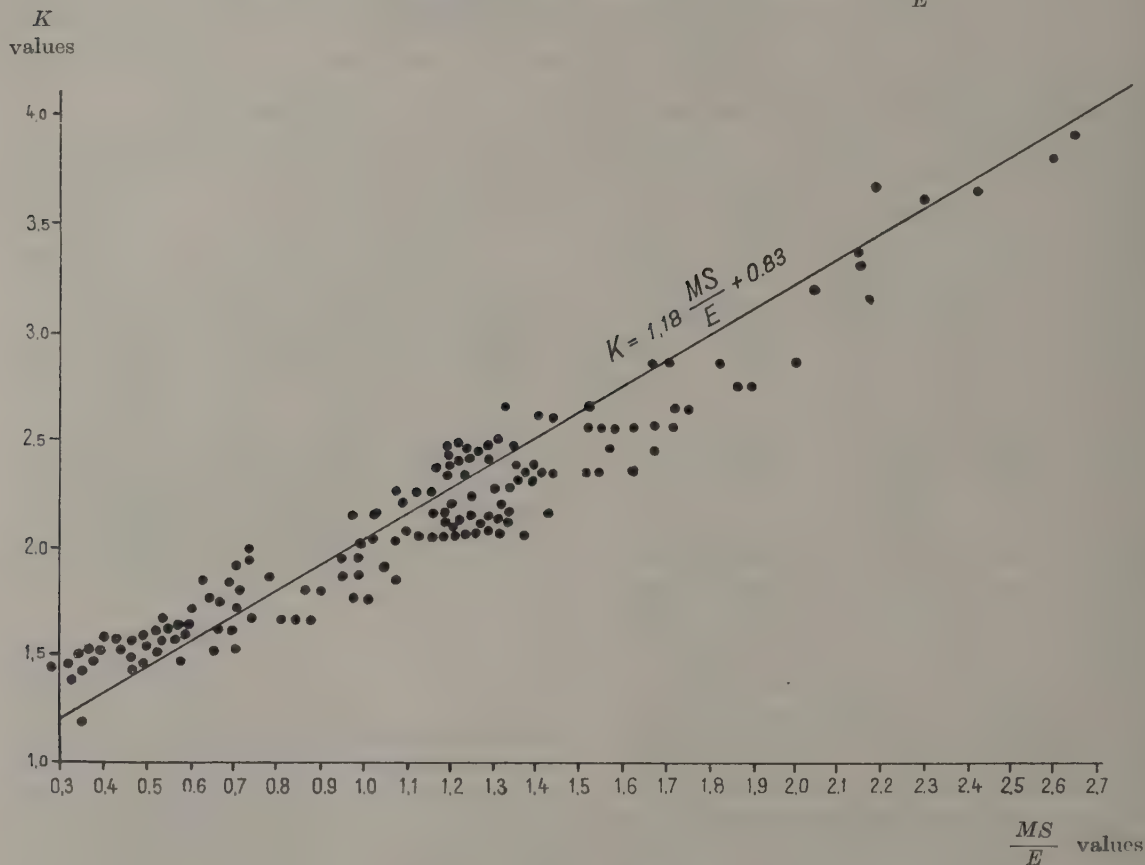
provided that it is assumed that the total metabolism expenditure representing the energy lost by the animal in 24 hours, is a linear function of the metabolism at maintenance level E . If this is the case, it is evident that it suffices to know the means of ascertaining in each instance the value of factor k to be able to solve all practical problems regarding

stockfeeding considered from the energy standpoint.

Now, according to the preceding paragraph, this hypothetical value of the coefficient k is unquestionably linked with the quantity of dry matter ingested. In effect, it is now known that the greater the dry matter in

actually measured during each experiment, to the corresponding values of the ratio $\frac{MS}{E}$, namely to the quotient of the dry matter ingested, by the value expressed in calories of the basal expenditure. The reason for selecting the experiments in question was

GRAPH No 2. Variations of the coefficient K in function of $\frac{MS}{E}$



the ration ingested, the greater the quantity of energy ($E \times k$) metabolized in 24 hours for the requirements of corporal activity under stall conditions.

On the other hand, it stands to reason that the value of k also depends on the conformation of the animal, since the smaller the size of the jaw of the animal, the longer the duration of a feed. for a given quantity of feed ingested, will be.

Taking these points into account, an endeavour has been made, for 153 metabolism experiments, to approximate the value ($E \times k$)

that they had been carried out on different species of animals (rats, poultry, rabbits, sheep, pigs, young steers, adult fattened steers and milch cows), and that the results published contained all the necessary details on the feedingsuffs ingested and their digestibility, on the nitrogen-carbon balance and on the gaseous exchange of the animals used in the tests. With these calculation data, therefore, it was possible to measure, in each case, the value for M , E , P and MS , which permitted estimating the factor k and the ratio $\frac{MS}{E}$.

Table 5 shows that there is a fairly close correlation between the two series of measurements. On plotting the 153 pairs of values by placing the $\frac{MS}{E}$ values along the abscissae and the corresponding values of the coefficient k on the ordinates, this correlation appears even more marked (Graph 2).

TABLE 5.
*Compared experiment values
of $\frac{MS}{E}$ and coefficient k .*

$\frac{MS}{E}$ values	Corresp. k value	$\frac{MS}{E}$ values	Corresp. k value	$\frac{MS}{E}$ values	Corresp. k value
0.28	1.40	0.95	1.84	1.28	2.26
0.31	1.37	0.95	1.93	1.30	2.34
0.31	1.41	0.97	1.94	1.30	2.50
0.32	1.44	0.97	1.95	1.32	2.12
0.35	1.40	0.97	2.16	1.32	2.17
0.33	1.20	0.98	1.74	1.32	2.20
0.37	1.45	0.98	2.06	1.33	2.31
0.37	1.50	0.98	1.85	1.33	2.38
0.39	1.50	1.00	1.74	1.33	2.62
0.40	1.57	1.00	2.04	1.35	2.45
0.43	1.56	1.02	2.17	1.36	2.30
0.44	1.51	1.05	1.90	1.36	2.37
0.46	1.43	1.06	1.86	1.37	2.06
0.46	1.48	1.06	2.02	1.37	2.26
0.46	1.55	1.08	2.25	1.39	2.31
0.47	1.57	1.09	2.07	1.40	2.37
0.48	1.46	1.09	2.21	1.41	2.15
0.50	1.54	1.12	2.04	1.41	2.33
0.51	1.58	1.12	2.26	1.41	2.60
0.52	1.50	1.15	2.25	1.43	2.34
0.53	1.54	1.16	2.04	1.43	2.60
0.54	1.59	1.16	2.17	1.51	2.33
0.55	1.60	1.17	2.04	1.52	2.54
0.55	1.61	1.17	2.35	1.52	2.64
0.55	1.54	1.18	2.17	1.54	2.33
0.56	1.45	1.19	2.05	1.55	2.56
0.57	1.57	1.19	2.09	1.56	2.46
0.57	1.60	1.19	2.31	1.57	2.56
0.60	1.70	1.19	2.37	1.61	2.57
0.62	1.82	1.20	2.20	1.63	2.34
0.65	1.50	1.20	2.40	1.66	2.84
0.67	1.73	1.20	2.46	1.67	2.46
0.67	1.75	1.21	2.10	1.67	2.57
0.67	1.60	1.22	2.12	1.71	2.57
0.69	1.60	1.22	2.40	1.71	2.85
0.70	1.50	1.22	2.48	1.73	2.52
0.70	1.59	1.23	2.08	1.74	2.52
0.70	1.83	1.23	2.33	1.81	2.86
0.70	1.89	1.23	2.46	1.86	2.75
0.71	1.80	1.24	2.40	1.88	2.76
0.72	1.94	1.25	2.07	2.00	2.86
0.72	1.95	1.25	2.13	2.05	3.20
0.74	1.68	1.25	2.26	2.15	3.30
0.77	1.84	1.26	2.44	2.15	3.35
0.81	1.67	1.26	2.10	2.17	3.14
0.84	1.66	1.27	2.18	2.19	3.62
0.86	1.67	1.27	2.43	2.30	3.60
0.86	1.80	1.27	2.47	2.42	3.63
0.89	1.79	1.28	2.14	2.65	3.81
				2.70	3.90

Examination of Graph 2 shows that the dots which represent the $\frac{MS}{E}$ and k values are aligned very approximately in a straight line, the equation being :

$$(1) \quad k = 1.18 \frac{MS}{E} + 0.83$$

There are various reasons for the divergencies from the general rule thus formulated. Primarily the measurement of the E value is frequently approximate, as it entails very appreciable experiment difficulties in practice. On the other hand, there is a risk of the excess protein substances, observed in some experiment rations, increasing the expenditure ($E \times k$) of metabolism, as it causes an abnormal increase in the specific dynamic action. (It is known that each gram of nitrogen distributed in addition to the strict requirements of the animal, eliminated with the urine, corresponds to a specific dynamic action of about 8 calories).

The varying degree of restlessness of the animal during its stay in the respiration apparatus sometimes modifies very perceptibly the value allowed for its basal expenditure. Lastly, the increase in metabolism under the influence of the consumption of a given weight of dry matter is not identical for all animals of the same species, and consequently, there is a risk of the value of factor k being affected.

For these various reasons, therefore, it may be recognized that some animals waste the metabolizable energy derived from their feed to the detriment of the interests of the stockbreeder or the fatterer, while others take full advantage of the sources of energy with great economy. For the moment, the underlying reasons for such differences can only be surmised, but a better knowledge of these peculiarities and their hereditary behaviour would undoubtedly enable a reduction to be made in the cost of producing milk or meat, by means of an appreciable diminution in the intake of the feedingstuffs required.

The problem of rational feeding—its solution

Now that the factor k can be measured, which amounts to knowing in each specific

case, the value of the energy lost through metabolism activity, an example will suffice to show how easy it is to apply a general method permitting the calculation of the items of a ration required by an animal of known weight and age, from which it is desired to obtain a specific quantity of useful products.

How much pasture does a 600 kg. milch cow, which gives 15 kg. of milk, 4 per cent. butterfat, per day, require? The energy value of this milk being calculated at 750 calories, the production ration of this cow will be:

$$P = 750 \times 15 = 11,250 \text{ calories}$$

On the other hand, Table 2 indicates that the basal expenditure of such an animal is 7,600 calories.

Let us consult a current table of the composition of feedingstuffs, such as that of WOLF, modified and completed by KELLNER. The following analysis is given for pasture grasses, before flowering:

TABLE 6.

Dry matter	250 gm.
Digestible organic matter	154 gm.
Percentage fat in organic matter	3.5 %

consequently, by means of the coefficient deduced by interpolation of Table 1, the quantity of metabolizable energy per kg. of grass, m , can be calculated. Thus:

$$m = 154 \times 3.83 = 590 \text{ calories}$$

Let x be the quantity of grass, expressed in kg., required by the animal. In this case, the basic equation becomes:

$$(2) \quad 590 \times x = 7,600 \times k + 11,250$$

On the other hand, we have:

$$k = 1.18 \frac{MS}{7600} + 0.83$$

expression in which MS is equivalent to $250 \times x$, since the dry matter per kg. of grass is 250 grams.

Let us replace k by this value in equation (2).

$$(3) \quad 590x = 1.18 \times 250 \times x + 0.83 \times 7,600 + 11,250$$

whence: $x (590 - 295) = 6,308 + 11,250$ which gives the value of x as 59.5 kg.

The same calculations for a milk yield of 10 kg. instead of 15, would give a figure of 47.1 kg. grass consumption.

Any feed problem, for all species of farm animals can be solved by this method, provided that the variations in the basal expenditure of each species are known, as also the composition of the feeds given, and the digestibility coefficients of the organic constituents contained therein.

Similarity between the above method and the more simple method of fodder equivalents

In practice, the problems which generally concern the stockbreeder, the fatterer or milk producer are those which regard feed substitutions. When a specific ration gives the result desired by the practical operator, he may be led to find out what quantity of a feedingstuff not included in this ration can be substituted, without entailing any change in the presumably satisfactory condition of his animals.

Here, by means of the preceding data, is how the problem can be solved in theory. For example, let us ascertain the unknown quantity of a feedingstuff B which can be substituted for 1 kg. of feedingstuff A taken as standard, without modifying the energy balance existing before this substitution.

Let M be the quantity of metabolizable energy contained in the initial ration, after deduction of the kg. of feedingstuff A . The dry matter which corresponds to the fodder supplying energy M will be indicated by S . Let s be the dry matter per kg. of feedingstuff A ; m , the metabolizable energy of the same feedingstuff. Consequently, by replacing k by its value obtained in equation (1), we have:

$$(4) \quad M + m = E \left(1.18 \frac{S+s}{E} + 0.83 \right) + P$$

Now, let m' indicate the quantity of metabolizable energy per kg. of feedingstuff B , and s' , the dry matter per kg. of the same feedingstuff. Thus, after substituting x kg.

of feedingstuff *A* by 1 kg. of feedingstuff *B*, we have :

$$(5) \quad M + m'x = E \frac{(1.18 S + s' + 0.83)}{E} + P$$

This evidently implies that the main part of the old ration has not been changed, nor the ration for production *P*.

Let us subtract equation (4) from equation (5), on both sides ; the result is :

$$(6) \quad m'x - m = 1.18 (sx - s)$$

from which the value of *x* can be obtained :

$$x = \frac{m - 1.18 s}{m' - 1.18 s'}$$

This conclusion has a fundamental importance. It indicates that *x* kg. of feedingstuff *B* can be substituted for 1 kg. of feedingstuff *A* without changing the efficiency of the ration, whatever the value of the common fraction of the other fodders, and whatever the value of the production ration. It is possible, therefore, to select a specific feedingstuff, to take a kg. of it as unit of measurement, and to calculate the *x* values of all other fodders which can be substituted for *A* without changing in practice the feed balance of the animals in question.

Thus, for instance, by taking as standard of reference the value of a kilogram of barley, using tables giving feed composition and the digestibility of the different groups of substances composing the feed, the respective equivalents of lucerne hay and mangolds can be calculated.

TABLE 7.

Determination of the fodder equivalents of lucerne hay cut prior to flowering and mangolds with 12 per cent dry matter. (Composition of feedingstuff per kg.).

	Barley	Lucerne hay	Mangolds
Dry matter	857grams	840 gm.	120 gm.
Digestible organic matter	722 gm.	456 gm.	94 gm.
Percentage fat in organic matter . . .	2.5 %	3.1 %	0.9 %
Metabolizable energy	2,707 cal.	1,733 cal.	340 cal.
$m - 1.18 s$			
$m' - 1.18 s'$ value	1 kg.	2.3 kg.	8.6 kg.

Under these conditions, a list can be drawn up of the ordinary equivalents, taking the average barley as standard feed. If, on the other hand, by means of this unit, the energy requirements of the different domestic animals, under as varied conditions of production as possible, could be estimated, we would have a very exact and simple method for devising rations suited to the requirements of practical stockbreeding. The following is an example, applied to the milch cow :

TABLE 8.

Energy requirements of the milch cow, expressed in fodder units (equivalent to 1 kg. of ordinary barley).

(1) Evaluation of maintenance requirements :

Weight of animal	Number of units in the requisite ration
400 kg.	3.5
500 kg.	4.0
600 kg.	4.5
700 kg.	5.0

(2) Evaluation of the milk production ration :

Per kg. of milk, 4 per cent. butterfat	0.38 units
(3) Growth correction for heifers and for cows in calf :	
Growth correction	0.5 units
Pregnancy correction :	
from 6th to 7th month . . .	0.7 units
8th month onwards	1.5 units

(4) Example : Requirements of a 650 kg. cow, yielding 16 kg. of 4 per cent. milk, still having milk teeth :

Maintenance requirements . .	4.75
Production requirements . .	6.10
Growth correction	0.50
	11.35 units

The net energy value of the fodder unit varies

By means of the fodder equivalent method, where the estimates always agree with observations, it is easy to prove that the net energy value of the fodder unit varies according to the intensity of production sought by the stockfarmer. Simple calculations, see Table 9, amply prove this statement.

TABLE 9.

*Energy value of the fodder unit,
in terms of milk production.*

- (1) Case of a full grown cow, weighing 600 kg., giving 8 kg. of 4 per cent. milk :

Requirements expressed in fodder units		Requirements expressed in calories net energy
Maintenance . . .	4.50	7,600
Production	3.04	6,000
	<hr/> 7.54	<hr/> 13,600

Net energy value of F. U. = 1,803 calories.

- (2) Case of full grown cow of 600 kg., yielding 20 kg. of 4 per cent. milk :

Requirements expressed in fodder units		Requirements expressed in calories net energy
Maintenance . . .	4.50	7,600
Production	7.60	15,000
	<hr/> 12.10	<hr/> 22,600

Net energy value of F. U. = 1,868 calories.

This finding is a proof of the entirely conventional value of feeding methods based on the concept of net energy. As pointed out at the beginning of this article, any standard measure calculated in net energy varies in efficiency according to the extent of the ration given to the animals. As may be deduced from the preceding paragraphs, the higher proportionately the requirements expressed in metabolizable energy or in net energy, the greater will the ration of net energy be to metabolizable energy.

Conclusions

In practice, the fodder unit method and the method based on the determination of metabolism energy by means of the coefficient *k*, are equivalent. Although the second method is particularly tempting, since it is a generalization of the surface-area law applied to the measurement of the basal expenditure, compared with the first method, it has the disadvantage of not being easily adapted for popular use. Because of its simplicity, the fodder unit method should be modified and given an international character.

For the last thirty years the author of this article has always found that this method gave exact details in full agreement with the facts observed, and, quite recently it was proved that it was in harmony with the second method, in which the far less empirical bases evidently give scientists greater satisfaction.

It may be added that any method may fail when it is a question of establishing a ration for one specific animal. In effect, it has been shown that animals of the same species, under the same conditions, may react differently to a scientifically calculated ration for reasons which, for the moment, are difficult to specify. For groups of at least four head, however, it may be affirmed that the use of modern feed tables gives results which are fully suited to the requirements of practical stockfarming, both as regards simplicity of use and exactness of estimates.

THE BRITISH COMMONWEALTH AGRICULTURAL BUREAUX'S POTATO COLLECTION

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One of the earliest plants to be introduced into Europe from America was the common potato (*Solanum tuberosum* L.). It is now known for instance, through the researches of Dr. R. N. Salaman, at Cambridge, that the first potato to come to Europe was not the proverbial one brought by Sir Walter Raleigh, or even Sir Francis Drake, in whose honour a statue was erected in the little German town of Offenburg to celebrate the event. The evidence shows that potatoes were introduced into Spain as early as the year 1570 or even before. There are records of their being purchased by the Hospital de la Sangre at Seville in 1573, presumably for the use of the patients, since the potato was at that time a great curiosity and was credited with strong medicinal powers. There was at first much confusion as to the identity of the plant. Its very name was assigned erroneously through its being confused with the 'batata' or sweet potato which had become known somewhat earlier. From Spain the potato was sent to Italy, to the Pope, where it received the name tartufi or tartufoli (truffles), and thence to Vienna, where the name was transformed again into the Kartoffel of modern German. This name has also been adopted by the Russians. Apparently the potato did not reach England till about 1586 and remained very much of a curiosity in rich men's gardens. It was in Ireland that it found almost immediate acceptance as the 'poor man's food'. To-day the

potato is cultivated throughout the world and is one of man's staple foods.

There is evidence to show that the potato was an important object of cultivation in South America long before the Spaniards arrived there. Potato cultivation was mentioned for instance by the early Spanish chroniclers; first of all by Castellanos in 1537, in the account of his military expedition to the Magdalena valley in Colombia, then by Pedro Cieza de León at Quito in Ecuador and in the Peruvian Andes. A visit to these places to-day shows that the potato is still cultivated there, probably in very much the same way as it was over three centuries ago when the Spaniards first saw it. Yet these South American potatoes are very different from the potato as we know it to-day in Europe. A study of them was first made by Russian botanists working under the direction of N. I. Vavilov, who appreciated their possible interest as a source of parent material for plant breeding. The original Russian investigations showed the South American potatoes to be of such interest that a number of other countries sent expeditions to South America to collect the potatoes too. The most complete of these was the expedition sent by the British Commonwealth Agricultural Bureaux. Over 1500 different potato forms were collected and these are now housed in a special station at Cambridge, England, where they are being sub-

jected to examination. An astonishing variety of types occurs among these potatoes, most of them not encountered among the ordinary domestic potatoes. Thus there are all conceivable shapes and sizes, some small and round, some large and knobbly, some long and sinuous like a serpent, others shaped like a fish, or like the head of a man or beast; there are all colours, from inky black, through various shades of purple and pink, deep yellow and cream colour to an ashy white, and there is an astonishing range of flavours. The pure botanical differences between the forms are equally pronounced, and a number of distinct botanical species have been established. Some of these species differ also in chromosome number, species with 24, 36, 48, and 60 having been found among the cultivated species. When the wild forms are taken into account the range of variability is extended still further and a new chromosome number, $2n = 72$, is added. Many of these forms have a short-day photoperiodic reaction and form no tubers when grown in the long days of the European summer; at the Empire Potato Station at Cambridge the greenhouses are specially constructed with a black-out mechanism so that the potatoes can be darkened at 7 o'clock and in this way a good yield of tubers is ensured.

Some of the forms in the collection contain certain characters of economic value not present in the common domestic potato and they are being investigated from all aspects so as to discover just which valuable characters are present and in which specimens. The collection has been classified from the point of systematic botany and comprises some 16 cultivated species and over 50 wild species. All forms in the collection have been examined cytologically and their chromosome numbers established. The collection is grown in special insect-proof greenhouses to prevent the spread of virus diseases. The virus content of all the forms comprising the collection has been determined and those that are free are now being subjected to intensive study to discover any which may possess resistance or immunity. Several very interesting speci-

mens have been found, some apparently possessed of total immunity, others of high degrees of resistance to certain virus diseases.

This might suggest that the problem of virus disease, which in the potato is probably the biggest single factor reducing the yield of the crop, is now solved. Unfortunately the situation is not quite so straightforward as this. The forms in which the resistance or immunity referred to above is found are very different from the type of potato familiar to our housewives and would never find acceptance either in a farmer's field or a dinner table: their tubers are generally small, irregular in shape, often also possessed of undesirable colour or disagreeable flavour; they have long sinuous stolons, which makes them awkward to grow and to lift, are low in yield and have a number of other defects. The only way of making use of valuable properties such as virus resistance which they may contain is to cross them with more desirable types, say domestic varieties, in the hope of combining the resistance of the the S. American form with the good qualities of the domestic forms. Even this is not always easy, since the S. American form almost invariably belongs to a different species and often to one so far removed from the domestic potato that the two will not cross together. In such cases, no progress can be made, unless some means can be found of overcoming the obstacle to crossing, such as chromosome duplication by means of colchicine, or the use of other modern techniques which when applied to certain other plants have occasionally been found successful in producing hybrids between species that normally will not hybridize. An intensive study of this aspect of the problem would undoubtedly yield interesting results.

In other cases the S. American species may cross with the domestic form but the hybrids may be sterile; again modern techniques are known which may overcome this obstacle and their application to the potato is to form the object of further study at Cambridge.

The picture is not as discouraging, however, as the above description of the difficulties may

now have suggested. For instance, the wild species *S. demissum*, many forms of which are immune to the late blight fungus, *Phytophthora infestans*, to the Colorado beetle and to considerable degrees of frost, will cross with the domestic potato. The hybrids are partially sterile and the breeding work with them is greatly complicated by this fact and by the difference in chromosome number between the species but nevertheless, it has been possible by the use of these hybrids to produce commercial potatoes resistant to three biological strains of the blight fungus, and possessed of such commercial excellence as to enable them to be accepted in the competitive trials for new varieties in Great Britain, where they will soon appear on the market. This has been done by Dr. W. Black of the Scottish Society for Research in Plant Breeding, Edinburgh and affords great encouragement for the use of the S. American potatoes in solving other practical agricultural problems. For instance frost resistance. As mentioned above, *S. demissum* is possessed of a certain degree of resistance to frost too. Frost resistance is a character which had not been suspected of being present in potatoes at all until the Russian investigators discovered potatoes growing in the Andes in areas subjected to almost perpetual frosts. The entire collection has been subjected to a preliminary series of frost tests and quite a number of forms have proved capable of withstanding frosts of two or three degrees centigrade. These forms are

awaiting further more intensive investigations and it is expected that they may form the starting point for the breeding of potatoes capable of being cultivated in areas where at present they will not grow because of low temperature in the early autumn.

These are just a few of the problems that can be solved by use of material such as that in the British Commonwealth Potato Collection. Other valuable properties known to be present in the potatoes comprising the collection are resistance to the Colorado Beetle (*Leptinotarsa decemlineata* Say) and resistance to the potato root eel worm (*Heterodera rostochiensis* Wollenweber), and it is expected that other features of interest from the plant breeding standpoint will be revealed as the investigations proceed.

Forms possessed of valuable characters are available for distribution to plant breeders in any of the countries which contribute towards the establishment and upkeep of the collection. Requests for material have also been received from a number of other countries and where possible these too have been met. It will, however, be seen from the above that the amount of material is limited owing to the particular conditions under which it has to be grown, and the demands upon it are very great, and consequently it has not so far been possible to accede to all the many requests for material that have been received.

International problems in animal hygiene

by Professor
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Epidemics create such a constant danger to livestock and cause such heavy losses each year that most nations have been impelled to enact laws and take measures to protect themselves from outside contamination and to check diffusion of any epizootic disease which might break out within the country. Such measures, which had the force of law, had already been taken in the eighteenth century; since then they have often been changed in accordance with the new scientific findings on the causes of these diseases. From the time that international trade by land and sea began to flourish the existing methods of prophylaxis no longer gave sufficient protection. It was found by experience that the only effective way to fight highly infectious diseases was to apply uniform measures to check them over as wide an area as possible, regardless of national frontiers. This began to be obvious at about the same time as the first international veterinary meeting was held. The first meeting was held in Hamburg in 1863 and busied itself, much as those that followed, with tabling proposals for new regulations in veterinary practice. An extraordinary meeting was held in Vienna in 1872 by the Austrian Government to work out a uniform method for fighting cattle plague. The following countries sent delegates: Germany, England, Belgium, France, Hungary, Italy, Rumania, Russia, Serbia, Switzerland and Turkey. The international action thus undertaken was carried out and a total of 13 international meetings of veterinarians have been held. One of the proposals was to make the slaughter of any animal suffering from cattle plague or contagious pleuro-pneumonia obligatory; these two diseases were effectively wiped out in

Europe from the moment the slaughter method was universally applied.

Towards the end of World War I a number of diseases made their appearance and immediately became widespread; two examples of these are influenza which attacked humans and foot-and-mouth disease in animals. This latter disease caused enormous losses in many countries. On top of this, cattle plague was introduced into Belgium when a cargo of zebus coming from India and bound for South America were unloaded in Antwerp to allow the animals to rest. The quarantine stables thus became infected and the disease spread from there. The origin of the infection yielded promptly to counter-measures as luckily the virus was attenuated.

Besides the bi-lateral agreements reached by certain countries very little was done on an international scale to fight epidemics other than by the meetings of the veterinarians who obviously had insufficient powers.

The French Government has the honour of having started the first international conference for the study of epizootic diseases in 1920.

The causes and aims of this meeting have been summed up in a letter dated October 1, 1920 written by M. Richard, the then Minister for Agriculture:

"It is absolutely necessary in the present circumstances that common action be taken against contagious animal diseases by public health officers.

Economic instability due to the war and the terrific reconstruction effort which is going on in the world has activated trade. Large numbers of animals are shipped long distances

both for food supply and for breeding purposes.

Not only Europe and America but also nations and colonies all over the world are involved.

Each country, it now follows, must look to the world health situation as well as to that of its near neighbours.

The statistics on this subject are published by a few nations only and at irregular intervals; this is not enough.

The recent outbreak of cattle plague in Belgium is an example of the dangers of a policy of isolation, whole countries are threatened by disaster through the importing of infected animals or animal products.

All nations have a vital interest in being correctly informed at all times on the occurrence of epizootic diseases.

The study of prophylactic measures, on the other hand, would be easier and more productive were there a previously established coordination between scientific institutes and individual researchers which allowed the interchange of views and results and which brought some common aim and discipline to their researches. Prophylactic measures employed by various countries would also benefit from study in common and comparison of the results obtained would be useful.

These matters, I may add, are also of public health interest as certain animal diseases are communicable to man.

To my mind a Conference should be convened in Paris as soon as possible to examine the following questions:

(1) The foundation of an annual international Conference for the study of epizootic diseases and their prevention.

(2) The creation of a permanent international Bureau on epizootic diseases with the following programme:

(a) The centralizing and rapid publication of all news on the occurrence of epizootic diseases.

(b) The gathering of all statistics relative to the study of these diseases, the following and instigation of research concerning them.

(c) The gathering of results on various methods of prophylaxis (sanitation, immunization).

(d) The preparation of work for the annual Conference by the study of all questions tabled":

The French government invited every country to this meeting, which was held May 25, 1921, and forty-two countries were represented. The foundation of an international Office of Epizootic Diseases was unanimously voted. The necessary preparatory work was begun immediately and by April 1922 the French government was able to submit to the other countries a project for the foundation, in Paris, of an International Office of Epizootic Diseases. In January 1924 an agreement for the setting up of the Office was signed by 28 States and many other countries came in later. By 1939 forty-five countries (sovereign states, dominions and colonies) had signed the agreement and this year another country has joined.

According to article 4 of the statutes the following are the chief aims of the International Office of Epizootic Diseases:

(a) To instigate and coordinate all research and practical experience relevant to the pathology and prophylaxis of contagious animal diseases which call for international action.

(b) To gather and bring to the attention of governments and their public health services, acts and statistics of general interest concerning the progress of epizootic diseases and the methods used in fighting them.

(c) To study the plans for international agreements concerning the sanitary control of animals and to give the signatory countries the means of checking the results.

Governments send in to the Office:

(1) Telegraphic notice of the first cases of cattle plague or foot-and-mouth disease which are reported from a country or region previously immune.

(2) Regulation bulletins at certain intervals on the occurrence or spreading of the following diseases: Cattle plague, foot-and-mouth disease, contagious pleuro-pneumonia, anthrax, sheep-pox, hydrophobia, glanders, dourine, swine-fever.

This list may be modified with the consent of the signatories.

The work of the Office is summed up by the table of contents of the Bulletin it issues :

(1) *The record of the proceedings of the Office.*

(2) *Original work.* The publication of important work by committee members, or recommended by them, on animal health and the general fight against disease.

(3) *Documents.* Data on the organization and working of public health services throughout the world are collated under this heading, especially annual and other reports on epizootic diseases.

(4) *Information Service.* In this section are gathered together all useful references not only on the fight against epizootic diseases but also anything that has a bearing on preventive veterinary medicine and its economic and social importance.

(5) *Digests and Reviews.* The integral or partial publication of articles of temporary or permanent value on prevalent diseases, their prophylaxis (hygiene, immunization) or cure (new treatments).

Statistical Data. The Office also publishes information culled from health bulletins (weeklies, monthlies etc.) coming from all over the world. These statistics, methodically classified, form an annual volume apart from the Bulletin.

Lastly, the *Reports on Annual Meetings* of the Office Committee contain :

(a) reports prepared on each of the questions put on the agenda of the meeting,

(b) information proper to these questions,

(c) minutes of the sittings,

(d) resolutions adopted.

Publications up to date :

26 volumes of the Bulletin, 1927-1947,

16 volumes of statistical data ; early data were published in the Bulletin,

13 volumes of reports (1934-1946), the early reports having also appeared in the Bulletin.

Publication was slowed up by the war but it was never suspended, not even when the Germans occupied the offices.

These publications may be consulted by anyone and give a good idea of the work accomplished.

These obvious activities, however, make up only a part of the task of the Office. In its twenty year span it has accumulated a mass of statistics which it puts at the disposal of Governments, companies and even of individuals who appeal for help. It is in a position to answer most questions which are put to it in an ever-widening field.

The Office in Paris, under the direction of distinguished Professor Leclainche, closely followed the program drawn up at the time of its establishment. Work has continued under the supervision of successive presidents, plenary assemblies and permanent committees.

The Paris Office has never stoppèd growing. From the very beginning it went beyond the rather narrow scope which its title erroneously seemed to assign to it. It examines not only diseases of the virulent type but also contagious, and other diseases which it is of economic interest to treat collectively on account of their frequency and gravity.

The Office has also helped as far as possible to organize the fight against epizootic diseases. In 1938 it made known the first treatises on the excellent results obtained by active immunization in the prevention of foot-and-mouth disease. On August 22, 1939 the Office Board sent out a circular to all signatories explaining the use and method of preparation of the vaccine, and requesting their collaboration. A number of countries responded quickly to this appeal. The 17th International Agricultural Congress which was held in Dresden in 1939 also supported the appeal of the International Office of Epizootic Diseases. In September, unfortunately, war broke out, and until now the project has been halted.

An arrangement was also made in November 1946 under the auspices of the Office for the preparation and distribution of foot-and-mouth disease anti-vaccine. The aim of this agreement was to supply those countries which did

not manufacture it. It was signed by those delegates having facilities at present in Europe for the preparation of the vaccine; these countries were Denmark, Italy, Holland and Switzerland.

At the last meeting of the Office, in 1947, the delegates voted unanimously a resolution encouraging the fight against cattle plague on a uniform basis and on an international scale.

Member countries of the International Office of Epizootic Diseases are free, of course, to follow or otherwise the measures recommended for epizootic prophylaxis. By the use of these recommendations, however, the Office applies a certain pressure on government authorities which are usually rather slow both in taking decisions and in putting them into action. Thus the Office in an effective and diligent manner lays the foundation for that international collaboration which is so vital to all.

Right after its foundation in 1945 the FAO (Food and Agriculture Organization of the United Nations) became interested as part of its duties so important and so necessary to animal health. It immediately investigated how prophylaxis could be made still more effective in animal diseases. With this aim the FAO several times convoked those delegates whose job it is to make such recommendations. During these consultations it ascertained that the usefulness and efficacy of the International Office of Epizootic Diseases had everywhere been long proved and recognized.

In October 1946 the FAO formed a Sub-Committee on Animal Health. At a meeting held at the beginning of April 1947 this Sub-Committee proposed a close collaboration between the FAO and the International Office of Epizootic Diseases and made the following important stipulations¹:

Its conviction of the primary importance of international cooperation in the field of

animal health and in the fight against epizootic diseases to improve food production of animal origin.

Its opinion that the functions assumed by the Food and Agriculture Organization of the United Nations by its Constitution aim to raise the level of man's nutrition and to improve agricultural output.

Acknowledgment that international cooperation in the field of animal prophylaxis is the province of the International Office of Epizootic Diseases, according to the terms of the Convention (Agreement) of January 25, 1924, and of the forty-six signatory countries.

Acknowledgment that the Office has done a successful job for over twenty years and that the experience thus acquired places it in a position of unequalled authority for continuing technical work in the field of animal health.

Its conviction that all dissipation of energies or duplication of labour must be avoided in the operation of the two organizations carrying on a rational fight against epizootic diseases on the international level.

It is to be hoped that the recommendations of the Sub-Committee be followed and that the two organizations, both the FAO and the Office in Paris, will find a solution which will be of use to the entire world. Though it is beyond any doubt that the technical side of animal health is the province of the International Office of Epizootic Diseases, the FAO can nevertheless perform an invaluable task by insisting on the application of the Office's recommendations and resolutions.

At least the three following conditions are requisite for an effective international attack on epizootic diseases:

(1) The strict observance by all countries of the obligatory declaration of the outbreak of an epizootic disease. There must be the certainty that each case of contagious disease be made known as quickly as possible and that no focus of infection be concealed.

(2) The essential public health measures must be rigorously applied in every case.

(3) Internationally recognized methods of procedure should be applied in every country. The various countries should assist each other

¹ This cooperation has been laid down by an agreement made at Geneva on 12th September 1947, between the Director of the Agriculture Division of FAO and the President of the International Office of Epizootic Diseases.

if necessary, unless the help of an international organization is available.

These are the fundamental principles whose application involves a great deal of detail, too much to go into here. As an example, one might mention the regulations governing the preparation, testing and storage of vaccines whose effectiveness has been recognized by the International Office of Epizootic Diseases. That question must probably be considered again later.

If all countries, or at least large areas, accept the basic principles which we have formulated, then one may be certain of a sharp regression in epizootic diseases. An increased yield and a consequent improvement in human diet will follow on this. To-day, veterinary medicine

is in possession of means which guarantee the wiping out of certain epizootic diseases as soon as these means are uniformly applied. A common and effective fight against epizootic diseases will greatly improve international trading in livestock. As soon as sanitary measures in conformity with present scientific progress are put into effect in all countries, certain bans can be lifted. It is not an exaggeration to state that international action to fight epizootic diseases is of importance to every country. Any aid given to the carrying out of such a programme will contribute not only to the improvement of animal health but will permit the increase of livestock production and thus render an inestimable service to humanity in general.

BETTER SEEDS BETTER CROPS

by **F. R. HORNE**

Director of the National Institute of Agricultural Botany, Cambridge.

The National Institute of Agricultural Botany was founded in 1919 when weaknesses in the agricultural seed supply had become apparent as a result of the intensive food production campaign during the first world war. The motto Better Seeds, Better Crops appears to be very appropriate for the Institute is stimulating the production of better seeds by three means.

(1) The Official Seed Testing Station was established as part of the Institute in 1921 to enable sellers of seeds to comply with the Seeds Act, 1920 and to provide information for the benefit of purchasers and for farmers who grow their own seed. The two most important features in seed samples are:—

(a) Purity

(b) Germination

The presence of harmless material such as chaff obviously reduces the value of a seed

sample and allowance for this should be made in the price. More serious, however, is the presence of injurious weed seeds or parasitic plants. It has been shown that the presence of 1 per cent of Common Dock (*Rumex crispus*) in a sample of Red Clover may lead to the establishment of five or more of these perennial plants in each square yard of a field sown with a mixture of grasses and clovers. This would be quite sufficient to reduce the value of the field, from the point of view of grazing or hay, to a very low figure. Moreover it would probably cause the resulting crops to be seriously infected with Docks so that the total effect on the food production program would be very considerable.

Clover Dodder is a weed which is of special importance. Living as a total parasite on the stems and leaves of the Red Clover it not only causes the death of those plants

which are first attacked but also spreads across the field and may cause total loss of the clover crop.

The germination capacity of seeds has an obvious effect upon their value to the grower. For many crop plants, authorized minimum percentages are stated in the Seeds Regulations 1922. Where seed samples fall below this minimum percentage a declaration of the actual figure must be made.

The speed of germination is another factor which is of great value to those purchasing seeds. When the soil conditions are unfavourable, samples of seeds which germinate rapidly are likely to give far better results than those which give a similar total germination, but are less vigorous in early growth.

The number of samples received by the Station each year is about 80,000 and it is not possible to investigate fully such other features as the presence of seed-borne diseases, though these are of particular importance in the case of celery Leaf Spot and Bunt in wheat, etc.

The whole principle of seed testing in the United Kingdom is based on the assumption that if a farmer or grower is correctly informed about the seed he is offered he will reject samples of inferior value. There are no restrictions to prevent farmers buying the poorest quality seed if they wish to do so.

The effect of the Seeds Act throughout the past 25 years has been to raise very materially the average germination and purity of seed stocks offered in the principal markets. Research work plays an important part in relation to seed testing. Not only is it necessary to decide the best conditions of temperature, moisture, etc. for seed testing, but also to investigate new methods such as the use of Tetrazolium and Selenium salts as rapid methods for estimating germination capacity.

It should be stated that the Official Seed Testing Station does not attempt to carry out all the tests on seed samples in the United Kingdom. At Corstorphine (Scotland) and Stormont (Northern Ireland) there are other Official Seed Testing Stations. In England and Wales there are about 70 private licensed

Stations attached to seed firms, etc. These Stations conduct the majority of the seed testing for seed firms. The Seeds Act of 1920 provides that samples shall be taken from stocks of seed offered for sale all over the country. Such samples are sent to the Official Seed Testing Station where the declared percentage of purity and germination are carefully checked. This furnishes a very valuable safeguard to the grower and ensures that seed testing is conducted on a reasonably uniform basis.

(2) *Seed Production.* During the war Britain was isolated from most of the usual sources of seed supply. At the same time the acreages of certain food crops were vastly increased so that more seed was needed. To improve this position the Seed Production Committee was established at the National Institute of Agricultural Botany in 1942 and has played an important part in connexion with,

(a) The regulation of acreages of the main seed crops, and,

(b) The improvement of the quality of home grown seeds.

The establishment of target acreages was facilitated by the introduction of the Growing Seed Crops (Control) Order under which growers of seed crops for sale were obliged to notify the proposed crops.

Thanks to the activities of this Department and to the efforts of seed growers and seedsmen throughout the country, farmers were never deprived of essential seeds needed during the critical War years. In some cases new techniques were developed for production of seed crops in the United Kingdom and very possibly certain of these new crops will remain a permanent feature in British agriculture.

Improvement in quality of seed stocks is principally achieved by the organization of Field Inspection Schemes. These Schemes cover a wide range of crops such as wheat, barley, oats, peas and pedigree strains of grasses and clovers. New strains introduced by the Welsh Plant Breeding Station have proved particularly suitable subjects for schemes of inspection.

tion. In some parts of the country local strains of high value have also been Field Inspected at the seeding stage. By this means old and proven stocks of ryegrass, red clovers and sainfoin have been preserved.

(3) Crop Improvement Branch is concerned mainly with the testing of new varieties and strains of crop plants. The range of crops comprises all those normally grown on arable land, *e.g.* potatoes, barley, oats, rye, wheat, peas, beans, mangolds, sugar beet, turnips, swedes, rape, kale and some of the field vegetables such as broccoli and brussels sprouts.

Following the introduction of Mendel's principles to plant breeding practice in 1900 large numbers of new varieties and strains were produced. In many cases new varieties were actually inferior to those already established. Some, though high in yield, suffered badly from diseases or had weak straw. Others were inferior in yield or quality. Very frequently a farmer used valuable land, labour and manures to test new varieties only to find that after paying a high price for the original seed he had to drop the whole stock after a few years. By means of a series of Farmers' Leaflets published on a range of crops being tested, advice is given as to the best of the new and established varieties. Full reports are published in the Journal of the National Institute of Agricultural Botany where the full method of procedure is described. It has been shown that the results from single plots of different varieties are very misleading and only when about eight repetitions of each variety are arranged in a random manner can accurate results be obtained. To run these complicated trials it is necessary to train specialist Crop Recorders. These are stationed at 10 different Trial Centres ranging from Newcastle-on-Tyne in the North to Newport, Shropshire in the West, Newton Abbot in the South West and Wye, Kent in the South East. At each of these Centres some 20 to 30 acres of land are cropped in yield trials each year and every

effort is made to establish these trials on land which would normally be used by the farmer for this particular crop. For example in areas where wheat normally follows Red Clover mixtures the National Institute of Agricultural Botany trials are established in the centre of a commercial crop of wheat grown under these conditions.

A special activity of the Institute during the past four years has been the establishment of 'Recommended Lists' of approved varieties. There are many advantages to be derived from the use of a restricted number of varieties. Farmers and seedsmen can more easily maintain the stocks in a pure condition. Millers, brewers and other processors are better able to produce a cheap and uniform article for the consumer. Prior to the second world War about 100 varieties of wheat were known in Britain, but now-a-days the main acreages are devoted to the 15 varieties which were placed on the Recommended List in 1944.

The Crop Improvement Branch has one further duty to perform; it has to accept responsibility for multiplying and distributing those varieties of cereals and potatoes, etc. bred at Official Plant Breeding Stations, which have been approved in trials. Under this Scheme each variety is distributed about once in three years so that pure stocks are available to the industry. In most cases the seed distributed by the National Institute of Agricultural Botany is grown under a Scheme of Field Inspection so that the ultimate commercial grower is assured of receiving seed of high purity and freedom from disease. New varieties bred by private seed firms are of course included in all the official trials equally with the officially bred stocks. Those privately bred varieties which prove their merit in trials are of course multiplied and distributed by the commercial organizations concerned.

By all these means the National Institute of Agricultural Botany is endeavouring to prove the value of its motto — 'Better Seeds, Better Crops'.

SOIL AND WATER CONSERVATION IN ITALY

by **Augusto ALFANI**

Engineer-Agronomist, Rome

The inhabitants of Italy, with its very high population density and very low per capita land availability (0.7 hectares as against nearly 6 hectares in the United States) have been compelled, for almost 30 centuries, to rectify the natural soil formation with a tremendous amount of soil engineering works. The relatively small area of agricultural land at their disposal have compelled the Italian farmers to exert all possible ingenuity to preserve their land especially against soil erosion which since time immemorial has been caused by the innumerable rivers rapidly flowing from the mountains to the not far distant sea. Yet the excessive usage to which the land has been put and the ignorance on the part of certain farmers not alive to the necessity of constant control, tend to reduce the effectiveness of the huge protective works which have been carried out. The need of practical measures for soil conservation is felt more than ever before and a clear and comprehensive control program must necessarily be developed and applied now. Such a program would consist of what in Italy is known as soil 'systemization'. By 'systemization', is meant certain soil engineering elements which in their particular groupings, and in association with the specific physical and climatic characteristics of a given land area, create favorable conditions for the agricultural use of land. The elements of soil engineering included in 'systemization' are those which (A) determine the size area utilized, (B) modify the slope of land cultivated, (C) create devices affecting the water content of soil. Their functions are (a) to maintain

a consistent water-content within the soil, (b) to control erosion, and (c) to improve the efficiency of land-use (8,11).

Good and bad 'systemizations'

Unfortunately not all Italian regions have benefited by adequate treatment in the 'systemization' of their land use: some areas are intensively managed; others even though heavily farmed are in a state of almost complete neglect. These contrasts are the result of the interplay of a combination of economic and social factors peculiar to Italy and concerning which much has been written by competent observers (16,17). Without endeavouring to explain all these factors, some may be briefly listed as follows: (a) the spirit of enterprise of the owner, (b) the size of the farm, (c) the repercussions of the feudal systems of land-use, (d) the economic profit, (e) the land rental system, (f) the faith of the people in the land, (g) the relationship between land-owners, contractors and labor and, finally, (h) the profitable rental of the soil for migratory grazing. Where the interplay of these factors has permitted development a wide variation in types of 'systemization' may be found, ranging from the level lands of the plains, where wonderfully-planned land-use includes development of hydraulics and irrigation, to the types of 'systemizations' found among hills and mountains with lands on slopes of even more than 50 percent where the terraces are confined by admirably conceived and mighty masonry structures.

Italy has very good types of 'systemizations' unfortunately not sufficiently generalized and not applied in all those areas where they could be employed. It is believed that Italy has already evolved, for each locality, the most useful and suitable type of 'systemization' responding to every exigency and making due use of every facility, as well as of every type of agriculture and environmental conditions such as soil, climate, etc. Many generations of men have improved each type, each generation adding good sense and practical experience to previous knowledge. Sometimes even types based upon empirical and arbitrary evaluation are not unprogressive. At present, the possibility of scientific and technical tests of the perfect application of each type of 'systemization' is lacking. If available, it might decide on engineering structures, which would permit of pre-arranged 'systemizations' even on new locations showing different environmental conditions from those existing at places where such types originated. Scientific data suitable for adaptation of each type to variations in percentage of slope, soil composition, frequency intensity of rainfall, seasonal moisture concentrations, and other factors have not yet been gathered.

Factors that determine the types of 'systemizations'

Plans for land reclamation including drainage irrigation and silt-accumulating catch-basins, have shown marked progress with the use of increasingly precise calculation methods.

Methods of 'systemizations' both on hilly land and plains, have been less scientifically developed, even after due consideration of all the elements of construction. There is a lack of study on the analysis of the relations between soil physics, crops, and hydrologic factors. The inadequacy of research has been partially offset by a dependable technique, based on practical experience.

Unfortunately, the limitations of this article do not permit of the description of each of the devices and 'systemizations' broadly referred to above (1,10,11), nor is it possible

to give any indication of mountain soil-conservation systems (9), methods for determining torrent-control requirements (3,6), planning valley silt-accumulating catch-basins (10) or ways to improve the condition of wide-spread badly-eroded clay soils (12,18) *. The striking characteristic aspects of the Italian landscape, as influenced by 'systemization' and tillage, are largely determined in various sections of the country by climatic conditions in which the humidity factor increases as we proceed from plain to hilly land mountains, as well as from Southern areas up to Central and Northern Italy. This is further influenced by the origin of the soil, the degree of slope and exposure.

Physiographic and climatic conditions

The soils of Italy are prevalently heavy and clayey. The hills and mountains have very steep slopes, while the plain lands are usually slightly above the water-level of the closely adjacent streams, or even in respect to sea-level. Rains are often heavy, and badly distributed as the precipitations occur almost wholly between October and May, while they are insufficient between June and September. Some cloud-bursts are harmful rather than advantageous because of their excessive intensity and because of the erosion arising therefrom, as the rainfall has not sufficient time to seep into the ground. Obviously, crops are adversely affected by winter excesses and summer deficiencies of rainfall and it is hard to judge which of these two evils is the worse. Another factor to be taken into account is the widespread low relative humidity of the air. Therefore, seeing that it is not possible to alter climatic conditions, man's technique, throughout the centuries, had to be modified so as to make agricultural results possible. The Italian farmer had to resort to engineering and agronomy, which include 'systemization' of the soil, in order to make practical use of the soil itself.

* Note: We hope to write a detailed description at some other date.

The phases and objectives of 'systemizations'

In Italy, the 'systemization' of the soil involves three phases: (a) the preparation, so as to render it fit for farming; (b) its defence or preservation from increasingly destructive erosion; (c) its improvement from the standpoint of conditions favorable to plant life (8). This means an increase in productive capacity, in order to reach an agronomic optimum, by establishing and maintaining an internal hydrologic 'discipline', and keeping a crumb status within the soil and a granular form on its surface, so as to prevent the soil from becoming clogged by impact of rain tending to break down the soil aggregates and to seal the pores of its surface as a result of tamping action. Thus, to attain increased productivity through 'systemization' is tantamount to obtaining improved economic conditions.

Broadly speaking, in Italy, we classify (11) as plain lands those comprising very slight slopes (less than 5 per cent.); the hilly land 'systemization' is needed where slopes have a grade up to about 35 per cent. Where the slope is above 35 per cent., it is generally necessary to use stone-retaining walls or assign this land to grazing or forestry purposes. Clayey soils on very steep slopes are often unsuitable for grazing or forestry and require special treatment if they are to be cultivated.

Depending upon the character of the local farming systems or of the local economic systems the 'systemization' has been applied on an extensive or intensive scale. Types of 'systemization' differ according to the aims to be attained on different sites, as follows:

(a) Prompt elimination of superfluous water;

(b) Conservation of the soil;

(c) Conservation of the water within the soil to secure sufficient humidity during the dry season;

(d) Simplification of farming practice through a proper subdivision of the land into field units, so as to make the land easily accessible and thus more easily farmed with the available means;

(e) Attention to future possibilities of irrigation.

The broad classes of 'systemization' devices

The ingenious devices used have been numerous, and it is almost impossible to describe them individually. However, the main classes are:

(a) open ditches for drainage, located: (i) on the plains: where their impounding capacity is determined by the length of the time the water can remain in the ditches without damaging crops or disrupting cultural practices and by the adequacy of the main canals to carry large quantities of water at flood peaks; (ii) on hilly land: where the size and the slope of the ditches are determined by their function, namely: - to carry the water slowly away from all points of excess runoff and, at the same time, - distribute it to the down stream soil through seepage, wherever water can be absorbed for summer storage, or to drain water away as promptly as possible from clayey lands which must not be permitted to absorb too much moisture in order to prevent landslide (18);

(b) shaped fields with modified slopes (i) on the plains, where the soil has been raised into gently sloping low ridges, and (ii) on the hills, where the grade been reduced by terracing or other means;

(c) use of deep plowing under certain conditions (see below).

Proper application of measures outlined under (a) and (b) is effective in preventing erosion of both sheet and gully type. Sheet erosion, while less obvious, equals gully erosion as a source of damage to field and of the silting of canals, rivers and other water-ways. Where there is insufficient difference in level between the natural land surface and the ground water-table, the method described under (a) (i) greatly increases the cultivated area. Agricultural 'systemization' frequently avoids much damage which might result from deficient or excessive natural slopes by substituting more satisfactory grades or other devices. Sometimes 'systemization' has produced the lowering of an excess of salts or colloidal compounds. Deep plowing (c) in many zones has been indispensable for the first

phase of 'systemization' in the preparation of soil for farming purposes.

More concerning deep plowing

The plowable layer of soil has sometimes been increased by means of deep tilling to a depth even of 2 to 3 feet, in order to ; (a) favour water filtration and air circulation, (b) give better opportunity for crop and plant roots to develop, and finally (c) facilitate and increase the water-storage capacity of the soil, thus improving moisture content for dry summer months. In some zones, the breaking of vulcanic tufa soil to a depth of 3 to 4 feet has completely revolutionized agriculture by changing it from a shallow layer of soil with poor grasses rapidly perishing with the setting-in of warm weather into perfectly good agriculture soil. Such deep tilling has been done both with Fowler rope-pulled plows and by means of blasting powder placed six feet deep. Water-storage capacity increased to 250-500 mm. of water, as compared to 70 to 150 mm. of water for soils plowed to a depth of less than one foot.

The need for a Research Institute

Italy is characterized by changeable climatic, geographical and geological conditions, with land resources exceedingly limited and a large proportion of dense rural population, with a most unsatisfactory standard of living. Italian scientists recognize the need for a broad program to conserve soil and water and to improve agricultural practice. In conjunction with the proposed national land-use survey and plans for 'systemizations' and erosion control work, it has been proposed that a National Research Institute should be organized to deal with the many complex problems related to the use and conservation of soil and water resources. Through a system of basic research, laboratory work, and field studies, taking proper advantage of knowledge already gained, a solid foundation would be laid for public and private conservative operations. Such an Institute should ascertain and apply all technical methods aiming at the scientific applications of the good results already achieved and develop,

coordinate and distribute all efforts toward the most rational 'systemizations' throughout the land. It should establish the nature and sizes of various devices needed for each 'systemization' and thus arrive at the best possible compromise to obtain the best control for any type of soil and any type of culture and, most important of all, to attain the best in the proper balancing of water 'discipline'.

Land studies, so far, have been mainly concerned with the chemical features of the land, and it should be the specific task of the Institute (2) to delve particularly into the physical and biological aspects of soils and into the hydrologic aspects of land-use, side by side with special studies dedicated to erosion control practices. It should coordinate its work with that of other agricultural research institutions and experimental stations and cooperate closely with the agricultural meteorological service in the study of soil and weather relationships.

Suggested subjects for research

Without attempting to define the scope of such an Institute, it may be useful to summarize some of the important subjects of research suggested by Italian scientists and technicians.

(A) *Soil Physics and Agronomy*: Infiltration, erosion, water-holding capacity and water-storage capacity of soil. All the relationships of soil and water to plant growth. Water impounding capacity as influenced by soil cracks. Water efficiency in the soil as a factor of production-increment; water influence and pedogenesis.

(B) *Meteorology*: Study of all the phenomena concerned with weather in all its phases, but especially with the analysis of rain frequency-intensity, dry periods and temperatures.

(C) *Applied Hydrology and Control Techniques*: (a) Balanced water economy of different soils, under the various headings: slopes and erosion, land-use, tillage, 'systemization', water-storage capacity and depression storage capacity, land-slide susceptibility; (b) run-off coefficient for small water-sheds in relation to various structures used and to rainfall intensity-frequency data and their

influence upon hydrology and silting up of large rivers; (c) 'systemizations' for reclamation and irrigation plans; (d) scientific calculation and comparison between various sizes of structures and devices used in one Italian type of cultivation and 'systemization', and various other Italian types, and finally, between Italian types and American or other foreign types which include the use of farm machinery; (e) accessibility to farms and fields; roads. Other subjects dealing with control techniques are (13): (f) New 'systemizations' for hilly land to provide drainage of surplus water during the winter rainy season, to conserve and hold within the soil as much water as possible during the spring for the summer dry season; (g) finding devices (mechanical, compressed air, small blastings, etc.) to loosen soil which has become extremely compact, especially around old fruit trees in order to facilitate air and water circulation at the root system. Fruit trees after they have been planted a fairly long period suffer very much from an asphyxiated-root condition and they recover and improve as soon as the soil has the possibility of again supplying a reasonable quantity of water and air.

(D) *Farm Machinery*: (In this field the study relative to 'systemization' is urgent, in order to make as much use as possible of tractors and farm machinery). Effect of slopes on the sizes of fields; experimental underplowing to gauge efficiency of traction equipment, especially in clayey soils; the determination of best types of plowing and underplowing, and their influence on the possible increase of water-storage capacity.

(E) *Cooperation* in the 'systemization' of mountain basins, torrent control, reforestation and pasture improvement, and in the study of their influence on hydrology.

The Institute, finally, would be useful for directing the demonstration work of 'systemization', in order to extend the use of the best practices by promoting private, public, cooperative and State action. It should produce technicians to become responsible for propaganda and extension education.

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ITEMS OF INFORMATION

NUTRITION



Nutrition in Austria

Bread grain deliveries improved during the second half of October. Up to the end of October, 81,803 tons of bread grains were delivered, *i. e.*, 6,161 tons more than in the preceding year. Deliveries have only been lagging behind in Upper Austria, Carinthia and in the regions bordering on the city of Vienna, while Lower Austria and the Burgenland have already delivered more than they had at the same period of the preceding year.

As the winter-wheat harvest has been very poor this year and the summer-wheat is being retained as seed-grain for the spring sowing of 1948, comparatively less wheat has been delivered (40 per cent. of bread cereals as compared with 58 per cent. during the preceding year).

Barley, oats and maize deliveries were in general more favourable than the previous year. Up to the end of October the Burgenland delivered the oats quota in full and the barley quota up to one half. In comparison the Laender lagged far behind. Maize delivery was considerably higher than in the preceding year, as thanks to the introduction of shucking machines and drying plants it was possible also to include maize on the cob.

Dairy deliveries to the market were most unsatisfactory in September. They remained somewhat below those of the preceding month and were by about 20 per cent. below those of September 1946, thus falling to the lowest level yet reached during this year.

The number of consumers in Vienna went on rising even after the leave period was over; with more than 1.5 million persons in Old Vienna and

over 1.7 million in Greater Vienna, it reached the highest consumer level since the end of the war.

With the beginning of the 34th period of distribution (November 10, 1947) it became possible through a higher assignment of fat, to raise the daily normal consumer's ration from 1600 to 1700 calories.

(Extract from "Monatsberichte des österreichischen Instituts für Wirtschaftsforschung", XX Jahrg., Heft Nr. 11, 1947, p. 295-297).

News from Greece

The government in its food requirements program has planned for the import of 36,000 tons of dried skim milk and 42,000 tons of evaporated milk. Ration scales for the use of the milk have been set up on a physiological need basis and include all children up to 18 years of age, pregnant and nursing mothers, ill children, tuberculars, hospital and orphanages. Local milk is not rationed as it is not considered administratively possible at the present time. The cost of the milk on ration is low for those who can pay and free to those who are classed as indigents (18-20% of the population).

After many difficulties, the school feeding program is ready to start in most areas with the reopening of the new school semester. The aim is to reach one million school children with a hot breakfast consisting of a cup of milk beverage and a large slice of raisin bread. Dried skim milk is used in the beverage and in the bread. The nutritive value of the breakfast is approximately 540 calories with 23 grams of protein of which 17 are of animal origin. The raisins and oil in the bread are obtained from local sources. In view of the conditions existing in Greece today, this program is a very practical one, as it is low in cost, simple in execution and administration, does not require much fuel, equipment, or personnel, and in addition provides the dietary essentials lacking in the diet of the child population. The cost to the child is very low; about a quarter of a penny a day to those who can pay and free to those who cannot pay. An important factor in this breakfast program is the

starting of an eating habit which needs much emphasis in Greece. Breakfast is a meal not indulged in by many people in Greece.

Refugees

The total number of refugees in Greece is now about 500,000 and is increasing by about 10% each month. This means that about 7% of the total population of Greece are refugees, and more than half of them are concentrated in the north. The nutrition conditions of these groups are very bad and need a close watch. The calorie intake ranges from 1,200 to 1,800 calories per day and is largely in the lower range. The government allotment of 950 calories in the form of bread and 750 drachmas per day is inadequate to meet their needs. Plans for increasing this allotment are being made. The home grown supplies which the refugees were able to take with them — mainly cereals and pulses — are being used at such a fast rate that they are bound to be exhausted soon. This has serious consequences as the present wheat and cereal allocation will not be enough to meet the Greek needs.

The effects of the reduction in agricultural production and animals will not be felt until later on.

The nutritive value of the soybean

Weekly summary reports of the meeting of the Academy of Sciences No. 22, of 1 December 1947, publishes a study by MESSRS. ROGER CROSNIER and PIERRE GIRARD and Mlle. GERMAINE KERNY on the nitrogen metabolism in relation to the assimilation of meat, soybean and yeast food (molasses yeast). The experiments, which were made on four human beings, gave the following results (with 16 findings for each 4-week period of observation).

(1) The optimum nitrogen assimilation is obtained, in inverse order, with soybean, then with yeast, and finally with meat. The assimilation coefficient is established by ascertaining the difference between the nitrogen absorbed and the nitrogen excreted (nitrogen in urine and in faeces).

(2) There is, apparently, a noticeable difference between the nitrogen assimilation of soybean and yeasts, on the one hand, and of meat on the other. There is a negligible difference between the absorption value of soybean and that of yeasts.

(3) The over-all average of results shows a low favourable balance in the case of soybean (+ 0.11), a small deficit in the case of yeasts (— 0.26), and a larger deficit in the case of meat (— 2.67).

The respective values of meat, soybean and yeast in a diet that is otherwise balanced can be compared physiologically. Their weight equiva-

lents, expressed in terms of utilizable proteins, amount to a quantitative similarity.

It appears, therefore, that when it is necessary, or when supplies are short, soy flour or aerobic yeasts may replace meat according to the following quantitative scale: 100 grams net of meat = 50 gm. of soy flour = 52 grams of yeast + 10 grams of fats.

Small variations in these proportions are likely to occur on account of the variable composition of the different samples of yeast and soy employed.

These figures, however, may serve as a standard of measurement which may be taken as a basis for calculations.

Food situation in Finland

Reporting recently on the food situation to be expected in Finland next winter, the Finnish Minister of Food said that in spite of the drought the grain crop is 13% larger than in the preceding year. The potato crop exceeds that of 1946 by 200,000 tons, so that no scarcity need be feared in this respect. There is sufficient sugar available. A credit of 5 million dollars has been granted for the sale of coffee.

The milk and butter production has, however, suffered from the drought and is considered inferior by 10% to that of 1946. Fat distribution will chiefly consist of margarine. Of the meat and bacon production 5 million kilograms are to be marketed.

Short News Items

In November 1947, Mr. Lechowicz, the Polish Minister of Food, made a statement on the food situation in Poland. The corn supply was certainly much better than that of 1946, but the severe winter and the drought had prevented the Polish people from meeting their requirements. The corn deficit which was 1 million tons in 1946 was reduced to 650,000 tons in 1947. One half of this was covered by imports from U.S.S.R. under an agreement signed in Moscow, which provided for the supply of 300,000 tons of cereals by the end of 1947. By November, Poland had already received 181,336 tons. Negotiations were under way to import cereals from other countries.

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The January issue of "The World Today" published an article on 'The Feeding of WESTERN GERMANY'. For the present, more attention must be paid in German agricultural production to

quantity (in high calorie value foods) than to quality. Imports will have to consist largely of bread grains, reinforced where possible with fodder grains and such fats as may be available.

AGRICULTURE



Notes from Eire

(Sent by the Irish National FAO Committee).

Crops and livestock

The annual census of crops and livestock was taken on June, 1 1947. The following are the preliminary returns with comparative figures for 1946:

CROPS	1947	1946
	acres	acres
Wheat	580,300	642,600
Oats	822,200	830,500
Barley	146,200	144,000
Rye, beans and peas. . .	13,200	11,600
Potatoes	381,300	390,700
Turnips	156,900	150,600
Mangels.	84,500	87,900
Sugar beet	61,300	79,000
Cabbage, etc..	37,600	38,700
Hay	1,996,400	1,935,200

LIVESTOCK	Nos.	Nos.
Milch cows and heifers		
in calf	1,248,400	1,308,700
Cattle under one year. . .	853,700	932,000
Other cattle	1,859,300	1,905,500
Sheep	2,095,800	2,422,900
Pigs	463,400	479,300
Poultry	17,106,500	18,276,200

The effects of unfavourable weather conditions which persisted until late in the sowing season are reflected in the reductions in the acreages under most crops. The most pronounced reductions are for wheat (9.7%) and sugar beet (22.4%). The acreages under wheat and sugar beet in 1947 were, however, 127% and 47% respectively greater than in 1939.

Although the later growing season was favourable and harvesting was carried out under good conditions the average yields per acre of wheat and barley were substantially lower than in 1946. The grain was however of better quality. The yield per acre of potatoes (which declined 2.4% in acreage) was also lower than in 1946. Warm, sultry weather in the late summer favoured the spread of blight and the subsequent fine spell tended to ripen crops prematurely. The percentage of small tubers in the crop was accordingly high. The official statistics of crop yields for 1947 will not be fully compiled for some time.

Grain prices

On 8 August, 1947, the Minister for Agriculture made an order on the same lines as in previous years restricting the sale of wheat and barley of the 1947 harvest to authorized purchasers and fixing the prices for wheat and barley purchased from growers. The purpose of this order is to ensure that the maximum quantity of grain is delivered to the mills. The prices to growers in 1947 for milling wheat of a bushel weight not less than 57 lb. is fixed at 55s. per barrel (280 lb.); for barley the maximum price that may be paid to growers is 40s. per barrel (224 lb.). The feeding of wheat to animals is prohibited by Order and heavy penalties are inflicted for any infringement. The purchase of barley for animal feeding purposes is similarly prohibited.

In view of the continuing uncertainty as regards supplies of imported wheat and feeding-stuffs, it has been decided to maintain in 1948 the compulsory tillage regulations at the level in operation since 1944. As a further inducement towards increased home production prices for the 1948 crops have been raised to 62/6d. per barrel in the case of wheat and 45s. per barrel for barley.

Fertilizer credit scheme

A fertilizer credit scheme enabling wheat growers to purchase fertilizers when they became available was introduced in 1943 and continued up to 1947. The purpose of the scheme was to encourage farmers to use, when better times returned, more fertilizers than they might be expected to use in the normal way and so to restore some of the fertility which had been removed from the land by excessive cropping during the war years. Under the scheme a fertilizer credit docket valued at 2/6d. was issued to growers in respect of each barrel (280 lb.) of millable wheat delivered to an authorized purchaser. In exchange for these dockets the Department of Agriculture undertook to issue vouchers enabling holders to obtain appropriate rebates when purchasing fertilizers. The Department has now begun the issue of vouchers in respect of the 1943 wheat crop and it is expected

ed that they will represent approximately £ 300,000 for that season. The scheme is not being continued in 1948 but the vouchers in respect of the crops of 1944 and later years will be issued as fertilizer supplies seem to warrant.

Livestock

The abnormally severe weather in the first three months of 1947 led to high mortality amongst livestock, particularly young cattle and sheep. The limited supplies of fodder available on farms generally and the late growth of grass accentuated the difficulties of stock rearing. The census returns show reductions of 13.5% for sheep, 8.4% for young cattle and 6.4% for poultry as compared with 1946.

Milk production was also retarded in the early part of the season and suffered a further setback in August when a period of prolonged drought was experienced. Production of creamery butter in the first ten months of 1947 was 462,000 cwt. approximately as compared with 515,000 cwt. and 552,000 cwt. in the first ten months of 1946 and 1945, respectively.

Output compared with pre-war period

The gross value of agricultural output (sales off farms plus consumption by persons on farms, without process of sale) in 1946 was £. 104 million as compared with £. 53 million in 1938/39. This substantial increase was mainly the result of price changes as the total volume of gross agricultural output declined by approximately 5% in the same period. While the gross volume of output of crops and turf (peat) increased by 31% between 1938/39 and 1946, the output of livestock and livestock products declined by as much as 14 %.

The fall in the volume of output of livestock and livestock products was most noticeable in the case of pigs and poultry and resulted from the inadequacy of supplies of imported maize and other feedingstuffs. Other branches of the livestock industry also suffered but to a less extent. The serious shortage of feedingstuffs was also reflected in a substantial drop in output of eggs and milk.

The increase which took place in the output of crops and turf can, in view of the shortages of fertilizers, machinery and implements, only indicate a considerable drawing on accumulated fertility during this period of intensive tillage. The tillage area in 1946 was 62% higher than in 1939. During this period total supply of artificial fertilizers dropped substantially so that soil fertility is now seriously depleted in many areas. The amount spent by farmers on the purchase of agricultural requirements generally (fertilizers, feedingstuffs and seeds) in 1946 was approximately

the same as in 1939, so that taking account of the price increases in the interval, the utilization of these requisites has been reduced to 50% of pre-war.

Labour

The available supply of labour is sufficient for normal purposes but there are local shortages of certain types of skilled men and the difficulty of retaining sufficient hired labour for milking at week-ends is a growing problem. To meet acute shortages which have occurred in recent years at harvest time a Harvest Labour Scheme has been operated since 1944 whereby farmers who anticipate a shortage of local labour for the saving of their crops can arrange to obtain temporarily from 'congested' districts in the western portion of the country men who are not required in their own districts. Men in those districts who are desirous of undertaking the work are asked to register at the local offices of the Department of Social Welfare; and farmers requiring their services notify their requirements to the tillage supervisors who transmit the applications to the above-mentioned Department. Steps are then taken to allocate from a panel of suitable harvest workers the number of men required by each farmer and in due course the men are given free rail and bus transport, with a small sum for out-of-pocket expenses, to go to the employment offered. The Government provide similarly for the men's return journey and contribute the major portion of each man's cost of board and lodging while employed. The farmers who use the men's services are required to pay at least a minimum rate of wages to them and to provide suitable board and lodging at a moderate charge.

Cotton-growing under the new Five Year Plan in the U.S.S.R. by V. Kosov, Vice-Minister of Industrial Crops of the U.S.S.R.

The Soviet Government has always devoted great attention to the development of native cotton-growing, which plays a big role in the national economy of the country. The economic importance of cotton-growing was stressed in Generalissimo Stalin's speech on February 9, 1946, when he placed cotton in the same rank as metal, fuel and grain.

The next five year plan provides for the rapid restoration and further development of cotton production in the USSR. By 1950 the cotton-growing districts should gather a gross harvest of raw

cotton amounting to 3,100,000 tons with a crop yield of 1.84 tons per hectare (a hectare is 2.47 acres), which exceeds the pre-war level by 25 per cent. In the Uzbek republic the cotton sowing area is to increase to 955,000 hectares. There, by the end of the five-year period the production of raw cotton will exceed 2,000,000 tons a year, and the average crop yield will amount to 2.24 tons per hectare or almost 50% above the pre-war level.

The boundaries of cotton sowings are extending considerably.

In the years of the German occupation of the Ukraine and North Caucasus, cotton sowings ceased completely. Considerable attention is devoted in the new Five-Year Plan to the rehabilitation of cotton-growing in these regions. A rise in the efficiency of agriculture follows upon wide mechanization of field work. The level of this mechanization will rise to 90-95% in plowing, 80-85% in sowing and 85-90% in cultivation. Harvesting work, which is most laborious will likewise be considerably mechanized.

In 1946, machine and tractor stations and state farms received many new tractors, motor vehicles and various implements for cultivating the soil on cotton plantations.

In 1947 cotton-growers will be supplied with new machines for harvesting the unopened bolls of the cotton plant, and other new machines, which will help to improve the processes of work and the quality of the cotton and accelerate its harvest. To raise the efficiency of agriculture in cotton sowing districts, the plan provides for a considerable increase in supplies of mineral fertilizers as well as toxic substances for combating pests and diseases of cotton plant.

Before the war cotton sowing collective and state farms consumed over 800,000 tons of various mineral fertilizers per annum. This level will be exceeded in the next two years and by the end of the five-year period the supply and consumption of mineral fertilizer in cotton planting will be doubled.

Seed cultivation and cotton plant selection is being extended and intensified considerably. At present 12 experiment stations are conducting cotton plant selection programs. Seed cultivation is carried on by a network of special elite farms, organized by collective and state farms, which supply seeds obtained by them to seed cultivation farms for reproduction.

The Soviet cotton production program has at its disposal a large number of varieties. This is exactly what is necessary for the textile industry, which produced strong and beautiful fabrics.

In the forthcoming years, it is planned to introduce widely new varieties of the cotton plant with a length of fiber from 35 to 40 millimeters and a strength of not less than five grams, also with a higher percentage of fiber yield. Already we have at our disposal varieties of cotton with a fiber yield of 39 to 40 per cent such as, for example, the Kanash variety.

Specialists have been assigned the task of cultivating new, earlier ripening varieties of the cotton plant to enable the gathering of the crop before frosts set in. Early ripening varieties will be widely grown in the more northerly districts of the country.

New varieties of the cotton plant with a natural colouring of the fiber, mainly of brown tint, are being introduced into cotton fields. The textile industry has already mastered the production of fabrics from these varieties of cotton fiber.

To ensure the further development of cotton-growing, irrigation and land reclamation work is being launched on a large scale in cotton-growing districts. Under the five-year plan, capital investments in irrigation and land reclamation have been set at 2,000 million rubles. This should ensure an increase of 656,000 hectares in newly irrigated land in the districts of humid agriculture and should also greatly improve water supplies to areas already under irrigation. Construction of such big projects as the Katta-Kurgan water reservoir, exceeding 660 million cubic meters of water, and the Tejen water reservoir as well as Kirov irrigation systems, will be completed during the five-year period, when considerable work will also be carried out for the reconstruction and further technical equipment of the irrigation systems in Ferghana, Southern Khorezma, the Vakhsh Valley, Mugan Steppe, and other regions.

(Extract from 'The Cotton Trade Journal', International Edition 1947).

Crop situation in 1947-48

Production estimates for 1947-48 based on information received at F A O head-quarters in Washington early in November show the following picture:

In the Northern Hemisphere long-continued droughts caused heavy crop damage, the extent of which has not yet been fully determined. Enough is known to show the critical nature of the crop losses in many countries, particularly in those regions which had large food deficits before the war, and many of which are still feeling the effects of war devastation.

In the Southern Hemisphere, where the harvest is still to come, the prospect is better, though nothing more than preliminary estimates are possible at this time.

Overall, there is no prospect of world exportable surpluses sufficient to supply import needs of deficit areas. It is apparent that greater efforts at conservation and international sharing must be made if sharp reductions in consumption of food in deficit areas are to be avoided.

Europe was hardest hit by bad weather. A freezing winter was followed by an extremely dry summer. The consequent reduction in food supplies will adversely affect output of livestock products during the winter, except as liquidation of flocks and herds increases meat supplies.

Latest available data on the harvested areas of some of the more important crops in Europe show that the area of wheat is less than in 1946, the area of rye the same, and the area of each of the spring-seeded crops — barley, oats, maize and potatoes — greater. Winter-killing cut down the area of wheat and rye harvested. While considerable spring reseeding was done, some of the land had to be reseeded in barley, oats and other spring crops.

Despite the difficult weather, the total area of these six crops was greater than in 1946. Improvement in supplies of fertilizers and equipment helped in part to offset the weather handicap.

The following table shows the harvested areas in Europe (excluding the U. S. S. R. and Albania) of the six crops:

AREA OF SPECIFIED CROPS EUROPEAN AVERAGE
1934-38, 1946, AND 1947 (in millions of hectares).

Crop	Average		
	1934-38	1946	1947
Wheat.	29.7	26.3	24.7
Rye	13.4	9.9	9.9
Barley	9.4	8.3	9.0
Oats	14.6	12.5	13.2
Maize	11.6	10.4	11.5
Potatoes	10.1	8.1	8.5
TOTAL	88.8	75.5	76.8

(Note: A hectare equals 2.471 acres).

In actual production there was a drop of nearly eight million tons in out-turn of wheat and rye a decrease which was of calamitous proportions for Europe. The decline resulted from lower yields from a slightly smaller harvested area. A summary of European production (excluding the U. S. S. R. and Albania) is shown in the following table:

PRODUCTION OF GRAIN CROPS AND POTATOES IN
EUROPE AVERAGE 1934-38, 1946, AND 1947 (in
millions of metric tons).

Crop	1934-38	1946	1947
Wheat	42.3	32.9	25.8
Rye	19.1	11.2	10.5
Barley	14.4	11.7	11.7
Oats	22.9	17.8	16.9
Maize	17.3	7.9	15.3
Potatoes	134.2	100.3	98.0

As shown in the foregoing figures, barley and oats production held about even with 1946, and estimates indicate that production of potatoes is not a great deal lower than last year. The increase of 7½ tons in maize production is attributable entirely to the four Danube Basin countries Yugoslavia, Hungary, Bulgaria and Rumania. Good weather, following the severe drought of 1946, enabled these countries to bring their maize production almost up to the prewar level.

In addition to the bad effects on food for human consumption, adverse weather conditions also sharply reduced supplies of feedstuffs. Reductions in output of root crops, hay, and pasture were even greater than in production of feed grains. Incomplete reports indicate that production of root crops, hay, and pasture in various Western European countries was 10 to 30 percent below that of last year.

A slight increase in total livestock population in Europe as a whole (exclusive of the U. S. S. R.) is noted. Though data are not complete, indications point to net increases of at least five percent for pigs and two to three percent for cattle up to the spring of 1947. While data on poultry numbers are even less complete or reliable, it is probable that the increase was greater than that for pigs.

To provide a basis for comparison, F A O attempted some calculations of the relationship between feed supplies and livestock numbers for 1946-1947 and for the prewar years. These show that for many countries of Western Europe total feed supplies were about 85 percent as large in relation to animal numbers in 1946-47 as in prewar years, and concentrate feed supplies were about 65 percent as large. Similar data for 1947/48 are not available, but there can be no doubt that feed supplies are smaller and animal numbers larger. Reports from several countries of unseasonably heavy fall slaughterings are indicative of this situation. Farmers are adjusting to the feed situation by slaughtering early instead of following the normal practice of feeding to heavier weights. This will result in larger supplies of meat and animal fats early in 1947/48, but in smaller supplies later on. It

is certain that slaughterings over the whole 1947/48 period will reduce the total number of farm animals.

(F A O Press Release).

* *

The delivery quotas for **grain** for the 1947/48 period for the combined area of **Western Germany** have now been decided. Farmers are required to deliver grain or a flour equivalent of 2,676,000 tons in order to maintain the present bread ration. This total exceeds by over 300,000 tons the amount collected in the 1946/47 crop-year.

The authorities are confident that the new quotas are well within the capacity of the farmers to meet, and import requirements are to be calculated on the fulfilment of deliveries.

* *

The **Roumanian maize** crop this year is officially estimated at about 5,000,000 tons, of which, it is believed, about 1,500,000 tons will be available for export. The maize to be exported will probably have to be kiln-dried, as the water content has been found to be considerable (20 % to 21 %) and it is unsafe to ship maize with a moisture content of above 16 %.

The bean crop is greatly below the average, being calculated at only 30,000 tons against a normal output of 120,000 tons, while the area under peas is small, due to the shortage of seeds, and the crop is not good.

* *

Official reports place the **Soviet cereal** harvest at 58 % above that of 1946, which indicates that Russian agriculture has recovered from last year's disastrous drought and has begun working towards its goal of equalizing and surpassing its pre-war output. The five-year plan provides for a harvest of 137,000,000 tons in 1950 which will be 5-7 % above that of 1940. Harvesting was carried out in a shorter time this year, and by October 5, 7,700,000 hectares (approximately 19,250,000 acres) more had been harvested than at the corresponding date in 1946. No announcement was made at this time with regard to export allocation.

* *

The International Emergency Food Council has allocated to Great Britain 24,000 tons of rice for 1948. It will be the first time in three years that Great Britain receives rice.

This quantity is about three-tenths of the 1938 import.

Wasteland returned to cultivation in Bulgaria

In the presence of the Minister of Justice, the Minister for Electrification, the Director General of Forests and Woods, the Svichlov-Nikopol Danubian barrage, which will enable 9,600 hectares of marsh and waste land to be reclaimed, was inaugurated on October 26, 1947. Construction began on June 5, almost a month after the date fixed according to program, 3,500 workers and operators contributed their efforts free, and the cost amounted to 310 million levas. The barrage is 15.5 kilometres long and 30 metres broad at the base and 4 metres at the top. Work was completed 45 days before the estimated date.

Italian crop yields

According to the provisional data supplied by the Central Institute of Statistics out of the twenty-three crops listed, only one (fennel seed) shows a decrease compared with the 1946 yield. The following list gives the figures for 1946 and 1947 :

Crops	1946	1947
	(quintals)	
Spring maize	17,585,000	17,770,700
Potatoes	20,874,960	25,960,550
Tomatoes	8,434,630	9,956,020
Dried beans	806,520	1,310,460
Groundnuts	40,349	71,988
Sunflower seed	60,512	112,038
Sesame seed	2,793	6,660
Soybeans	7,389	40,773
Castor oil seed	15,222	42,480
Lucerne seed	121,060	163,820
Red clover seed	27,840	31,720
Lupin seed	21,570	24,720
Sulla seed	29,120	29,700
Crimson clover seed	15,950	17,000
Fennel seed	20,080	14,820
Vetch seed	63,250	93,250
Ladino clover seed	3,390	6,870
Apples	2,993,360	4,847,340
Pears	2,433,540	2,528,340
Quinces	85,320	102,820
Pomegranates	44,680	50,690
Walnuts	425,060	494,990
Carob beans	388,610	486,520

National Italian Farmers' Congress

During the Farmers' Congress which was held in Rome at the beginning of December 1947 and which was attended by many agricultural associations, three main reports were discussed : conversion of Italian agriculture with a view to meeting world market conditions ; farm land and work in

relation to the new constitution of the State; and the economic and agrarian aspects of the tax problem and State insurance. It was recognized that, before reconstruction work could be achieved, order and calm will have to be restored in farming areas; that the restoration of agricultural economy is linked primarily with the return, as far as possible, of the pre-war level of production, which depends partly on the availability of farm tools and machinery, and on the renewal of agricultural technical services, especially of the provincial inspectorates and the offices for the propagation of scientific knowledge. Farmers should again control the land improvement consortia in order to obtain a satisfactory solution of the problems concerning land and agricultural conversion and irrigation projects. A protective policy should be followed in establishing international exchanges, taking into account the special characteristics of Italian agricultural economy. Contracts which lead farm workers to take an interest in production and which give more stable wages will be favoured. With the right to go on strike there should be a guarantee of freedom of work. The question of employing more farm labour will be examined. The granting of wasteland should be governed by legal provisions. The taxes levied on farmers will have to be examined at the earliest possible moment in order to eliminate arbitrary and dangerous taxes, and also the contributions to insurance and sickness funds. Lastly, an appeal has been made to Italian farmers to consolidate their syndical organizations by obtaining the union of all categories in the Italian Federation of Agriculture.

New grain varieties in the Ukraine

The grain selection station which was established at Mironowka in the Ukraine 30 years ago, produced the winter wheat variety 'Ukraine' which is very well known in the Soviet Union and with which an area of more than 4 million hectares has been sown. The workers in this selection station have now obtained a new winter wheat variety of high production value, the 'Gostianum MW-1'. The States Laboratory has also obtained a winter wheat variety, which can stand frost and which is called 'Lutenseans DW-4'.

A rye variety with a high production value has been obtained, as well as some bean varieties which are being grown both in the kolkhozy and in the sovkhhozy.

Agriculture in Austria

According to the latest agricultural statistics the total farm area in 1947 was inferior by 15,000 hectares (1 per cent.) to that of the preceding year, while the area for cereals (including shucked maize)

and potatoes, was smaller by about 63,500 hectares than that of the preceding year. The evident conclusion is that farmers must have limited the growing of cereals and potatoes in order to grow more sugar and mangolds and more fodder grown in the field. The small fodder yields of natural pastures and the low yield in fodder-straw due to the drought of the last two years have favoured the higher fodder production on arable land especially as hay and mangolds are not subject to delivery quotas.

As a consequence of drought and heat the yields per hectare have considerably decreased as compared with 1946, particularly north of the main ridge of the Alps. The partly increased yields per hectare in several *Laender* have little importance owing to the small acreage under crops.

The sugarbeet acreage has been increased by a third in 1947 as compared with 1946. Though the yield per hectare of sugarbeets is probably less high than in the preceding year, the yield in sugar is estimated at 35,000 tons or over a third more than in 1946, on account of the higher sugar content of the beets (up to 3 per cent.).

The wine harvest for 1947 is estimated at 800,000 hl. as against 1,200,000 hl in 1946. The excellent quality (the must showed up to 22° Brix) compares with that of 1947.

In October there was an average of only 5 days of rain with, in the chief agricultural regions, only one day with more than 5 mm. South of the main ridge of the Alps and north of the Danube there fell less than 25 per cent., on the eastern edge of the Alps, in the northern foreland and the inner region of the Alps 20 to 40 per cent, in the Northern Lower Alps 40 to 60 per cent. The drought caused many springs to dry up and the herds to return from the Alpine pastures before time.

The rains fallen during the first half of November made plowing possible as well as the late sowing of winter-wheat and allowed healthy seeds still lying dry in the soil to germinate.

The pig stocks have increased as is usual during this season. While total stocks again approximate those of 1944, stocks of sows, sucking and young pigs are comparatively larger.

(Extract from 'Monatsberichte des österreichischen Instituts für Wirtschaftsforschung', XX. Jahrg., Heft Nr. 11, 1947, blz. 295-297).

News from Czechoslovakia

○ Information on the Soviet wheat deliveries is given elsewhere under the heading Economics and Markets.

○ It is acknowledged by the Czech authorities that their country's grain shortage, a consequence of

the catastrophic drought of 1947, would have presented them with an insoluble problem, if the Soviet deliveries had not been undertaken and executed in time.

○ The weak point in the food situation is in the milk supply: consumers of from 20 to 55 years of age receive no allocation of milk. A "Milk for Children" drive was initiated by Mrs. Hana Benesova, wife of the President. American help for Czechoslovakia will supply Czechoslovak children with a total of 220 tons of dried milk; 20 tons have already arrived and 60 tons are on the way, states the Zemedelské Noviny.

○ The difficult food situation has resulted in restriction of the food parcels which can be sent from Czechoslovakia to other countries. A Czechoslovak subject travelling abroad, unless he has a special permit, is entitled to carry a maximum of only 5 kg. of foodstuffs, and only the kinds which are individually specified in the regulations.

○ Weather conditions remained favourable for ploughing and seeding during the first half of December throughout much of Czechoslovakia. It was stated that by the middle of December, 94.7 per cent. of the bread cereals area had been sown.

○ Two principles are recommended for the rehabilitation of the reduced numbers of cattle; i. e. (a) that no young stock under a minimum of 400 kg. be sent to the slaughterhouse, and (b) that each healthy calf be reared. It is the authorities' intention to grant all possible aid to farmers willing to rear healthy calves, particularly in safeguarding their special allocation of feedingstuffs.

○ The Czechoslovak Farmers' Journal (Zemedelske Noviny) reports that the Czechoslovak forests, which have not yet fully recovered from the attacks of the bark beetle (*Ips typographicus*), are threatened by a new danger. The present increase in incidence of *Liparis (Bombica) monacha* is due to last year's dry summer. All possible measures are being taken to check the spreading of this dangerous insect, whose larvae, during the years 1920-1927, destroyed forests covering an area of over 100,000 hectares.

○ Large-scale preparations are being made for the Pan-Slav Agricultural Exhibition which is to be held in Prague from May 6th to May 27th, 1948. Poland, Yugoslavia and Bulgaria have sent notes to confirm their definite participation, and the Soviet Union has also promised to take part. The Anniversary Congress of Slavonic Agriculturists will also be connected with the exhibition.

○ Mr. HERBERT C. HANSON, FAO Representative in Prague, left for Washington on January 10th 1947, having finished his mission. The Czechoslovak

National FAO Committee took leave of Mr. HANSON at a lecture party given in his honour on January 9th, 1948. Mr. Jan TAUBER, Secretary General of the National Committee, in a short speech, expressed warm appreciation of Mr. Hanson's work.

News from Poland

○ The Minister of Agriculture and Agrarian Reform has published the results of the autumn sowings; 5,213,000 hectares have been sown, which is to say that 98 per cent. of the proposed 5,312,000 hectares have been tilled.

○ According to official figures, yearly crop losses amount to 7 million zloty owing to the damage caused by rats and mice. Animal pests and plant diseases damaged 15-20 per cent. of the total production. Cereal losses are calculated at 10 per cent. In State land, 74,000 hectares of fallow were ploughed up during the autumn of 1947.

○ In 1946-1947, the State undertakings for plant improvement produced 152,000 quintals of seed for autumn sowings, 116,000 qls. of spring seed and 200,000 qls. autumn seed potatoes. The main objective of these enterprises is the distribution of high grade seeds to smallholders.

○ The Sugarbeet Growers' Association has 515,000 members dispersed in 22,000 villages. With this season's crop, the quantity of sugar for home consumption will amount to 14 kilograms per capita per year; 130,000 tons are to be exported.

○ During the first half of 1947, the agricultural machinery Centre delivered machinery to villages to the value of 800 million zloty. The present output in agricultural machinery covers not only home requirements, but allows a considerable surplus for export.

○ In 1947, according to the 3-year program, 22 silos with a capacity of 116,800 tons were constructed. At the end of 1947, a further 15 warehouses with a storage capacity of 85,000 tons, have been renovated. The building of 17 stores, with a capacity of 67,000 tons, begun in 1947, will continue in 1948.

○ According to the report of the Ministry of Food, until the next harvest, food supplies will be assured by means of 300,000 tons of Russian grains, 400,000 tons cereals delivered in lieu of land tax, and 300,000 tons of imported grains.

○ Although food supplies have increased, the consumption level of the population is still rather low. At present the calorie intake per consumer does not exceed 1,822 per day, but this figure will

soon rise to 2,101. In 1947, the cereal crop amounted to approximately 5 million tons, being about 500,000 tons short of requirements. The stocks now on hand stand at 600,000 tons, sufficient to supply the urban population for four months. The potato yield is calculated at 23 million tons. It is expected that prices will be cheaper in spring. In 1947, meat and fish production rose to approximately 420,000 tons; consumption requirements amounted to 455,000 tons. Fat production figures at 120,000 tons; the 40 per cent. shortage will be covered by fat imports totalling 40,000 tons.

News from Roumania

○ Autumn agricultural work in Rumania has been finished with favourable results, and plans have been fully realized. During the autumn an area of 4.5 million hectares was ploughed; of this 2.5 million hectares were sown with wheat, 96,000 hectares with rye, 51,000 with barley and 2,000 with beet.

○ The sugar production is satisfactory, in comparison with that of last year. In 1946, Rumania's total production of sugar was 3,260 wagon-loads. According to experts, the 1947 sugar production rose to 7,800 wagon-loads.

○ In September 1947, Rumanian paper factories processed 8,274 tons of cellulose: in October 8,646 tons; and in the first two weeks of November 3,890 tons. The results have exceeded those expected.

○ To ensure the continuity of the distribution of goods, the Rumanian government has established State Commercial enterprises, which will play an important part in the future of Rumanian economy, together with private enterprises.

○ State foreign trade enterprises have been established. They will control exports and imports in the future and will promote foreign trade. They will collect the goods to be exported, provide the means of transport and the necessary credit.

○ According to an official Rumanian report, 50 per cent. of Rumanian exports for 1947 went to U.S.S.R. and 40 per cent. to Hungary, Yugoslavia, Poland and Bulgaria: 46 per cent. of Rumanian imports originate from the U.S.S.R.

○ In the early part of December 1947, the Rumano-Bulgarian agreement was prolonged to 1948. By its terms, Rumania exports glassware, and salt, among other goods, to Bulgaria, in exchange for minerals and other essential goods. At the end of December, a Rumanian economic delegation travelled to Moscow to confirm the Rumano-Soviet economic and commercial agreement.

News from Yugoslavia

○ The largest plant in the Balkans for the processing of tomatoes is being set up at Opuzen on the marshy banks of the Neretva. According to the opinion of experts, this region is the most suitable for the cultivation of tomatoes. Tomato yields attain 30,000 kg. per hectare.

○ Efforts are being made by the State Agricultural Institute of Kanajt (Krk Island, Veglia) to develop a more intensive cultivation of the olive. Up to the present in Yugoslavia, olive-trees were only found growing wild. The Institute in question has established groves of an improved variety of olive which, apart from their industrial utilization will be of value in protecting the denuded mountains of the Karszt, along the coast-line. The new olive varieties are resistant to winter conditions.

○ Prior to the second world war, Yugoslavia had no petroleum output, as the naphtha deposits had not yet been discovered. The mineral-oil industry of Yugoslavia will be centred in the wide tertiary terrain extending from Slovenia to the Rumanian frontier.

Egg production in Europe

Extract from document C47/13 Part 3 prepared by the staff of FAO for the third session of the FAO Conference at Geneva, August 1947.

Current European production and imports will permit a per caput consumption of eggs at about two-thirds of the average 1934-38 consumption, with the reduction being most severe in the eastern and southeastern countries, which are dependent almost entirely on indigenous production. In Ireland, Denmark, France, and the Netherlands, consumption will exceed the prewar average, and in the United Kingdom it will be somewhat below the prewar level, with a large part in dried-egg form. In Germany and the eastern and southeastern countries, however, consumption will be at about one-third of the prewar level. In the United States and Canada, it is likely to continue at a high rate during 1947 and 1948, materially exceeding the prewar average, although it will be lower than in 1946 because of smaller production. Consumption rates for 1947 are not likely to differ materially in Oceania or Argentina from the prewar rates, but in Argentina may be lower than the 1946 level because of heavy reductions in numbers brought about by unfavorable price relationships.

The United Kingdom's requirements are expected to increase to 450 million dozen (approximately 335,000 metric tons). These will be met partially

through its two-year bilateral agreement with Canada to take all of Canada's exportable surplus (one-half in dried form) and its one-year agreement with Ireland to take about 21 million dozen (about 15,000 metric tons). Some imports will enter also from the United States (principally dried eggs) and from Poland.

Poultry numbers in Europe were reduced drastically during the war period because of the ready availability of poultry as food and because of the feed shortage. By 1947, numbers had partially recovered although shortages of feed continue to hold them in check.

The decline in egg production in the European countries was severe. The Netherlands, for example, in 1945 produced only 20 percent of the 1934-38 average; Denmark, 43 percent, and Belgium, 13 percent. Production in Europe is expected to increase rapidly, however, as feed becomes more available, and should approach the prewar level within a year and a half following the ready availability of feeds.

Prior to the war several European countries exported eggs, the principal exporters being Denmark, the Netherlands, Poland, and Ireland. The United Kingdom and Germany were the leading importers. In 1945, most of the European countries were on an importing basis. Denmark was an exception: in 1945 it exported about 10 or 11 percent of its prewar volume.

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According to a recent investigation carried out by the Italian Central Institute of Statistics, Italian production of eggs, and dressed fowls and rabbits attained a total of approximately 170 milliard lire.

In January 1947, hens and cocks numbered about 50.6 million, of which half were located in North Italy (Venetia, Emilia, Lombardy), 1/5 in the central regions, 1/5 in the south, and 1/10 in the islands.

Sugar - International Council's Statistical Review

The International Sugar Council held a meeting on December 8th, at Shell-Mex House, London. It was attended by representatives of the 17 Governments which signed the Protocol of August 29, 1947, prolonging, under certain conditions, to August 31st, 1948, the International Sugar Agreement of May 6th, 1937, and by an Observer of the Food and Agriculture Organization. The Council decided to invite also an observer for the Government of Pakistan.

The principal item of the Council's Agenda was a report of their Statistical Committee covering the world sugar position for the crop years ending

August 31st, 1947, and August 31st, 1948, and for the calendar year 1947.

The figures for the year ended August 31st, 1947, most of which are now definite figures, show that world production of sugar was about 24,693,000 metric tons and world consumption about 23,615,000 metric tons. The excess of production over consumption, 1,078,000 metric tons, was an addition during the year to world stocks but a considerable proportion of this was already allocated for shipment before the end of 1947 under the international Emergency Food Council Arrangements.

The Council thinks it important, moreover, to emphasize that many countries are unable through lack of purchasing power, to buy all the sugar they need to put their consumption even on a pre-war level; world consumption during the year having been some 3,500,000 metric tons less than in 1938/1939.

The calendar year 1947 figures, however, show that the increase of stocks during that year is likely to be only about 500,000 tons. The main reasons why this increase is less than that during the twelve months ended August 31st, 1947, is that consumption in the U. S. A. is likely to increase by about 1,100,000 tons while world production is likely to increase only by some 600,000 metric tons.

The detailed figures for the year ended August 31st, 1947, and for the calendar year 1947 will be published in the next quarterly Statistical Bulletin of the Council.

The estimates for the year ending August 31st, 1948, are at present based on so many assumptions that the Council felt that no useful purpose would be served by publishing the details until the position in regard to some of the major questions is clearer.

All the figures are expressed in raw value.

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The International Emergency Food Council has announced that it will make no recommendation for the international distribution of sugar in 1948. The decision was taken after a careful review of the supply prospects for 1948 indicated that they would be adequate to meet all the requirements likely to materialize in view of the difficult foreign currency position of many countries.

World sugar production in 1948 is estimated at about 33.7 million short tons, raw value, an increase of 1.5 million tons over the 1947 production, but a corresponding amount less than pre-war.

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According to a news item in the *Financial Times* (December 1947), the total European sugar beet production, including the USSR, in 1947-1948,

amounted to 7,304,000 metric tons, compared with the 6,600,000 m. t. produced in the 1946-1947 season. World production reached 9,158,000 m. t. compared with 8,642,000 m. t. in the previous season.

Cane sugar production in 1947-1948 is estimated at 18,064,000 m. t. compared with 17,964,000 m. t. in 1946-1947.

German sugar production

Estimates of this year's beet sugar harvest in Germany are as follows:

U. S. zone, acreage 31,500 hectares (last year 29,400); beets harvested 473,000 tons (800,000) raw sugar production 66,200 tons (100,000).

British zone, area, 106,000 hectares (100,000); beets harvested 2,387,000 (2,300,000); production 330,000 (300,000).

French zone, area, 10,100 hectares (7,000); beets harvested 150,000 tons (207,000); production 21,000 (28,000).

In Niedersachsen, factories will be working the crop.

The total for the Anglo-U. S. zone of 396,200 tons is considered to be rather high, other authorities putting the total at no more than 360,000 tons.

Sugarbeet cultivation in Poland

According to the three-year plan, for the crop year 1947-48, 210,000 hectares will be sown to sugarbeet. Growers number approximately 550,000 and 65 per cent. of the crop is grown on farms under 50 hectares in size.

Sugar production in the Ukraine

The sugar factories in Winnitsa (Ukraine) produced about 3,500,000 poods (1 pood = 36 lb.) of sugar during the month of October. One of the largest sugar factories in the Ukraine, in Gniban has been brought into production. Altogether, 119 Ukrainian factories have produced 16 million poods of sugar which is 2 million poods more than the whole of last year's production. The establishments in Kiew have produced 3 1/2 times as much sugar as last year.

Short News Items

The tobacco crop in **Algeria** is estimated at 130,000 qls. for 1947, compared with the 165,000 qls. obtained in 1946.

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According to a statement made by the Director General of State Monopolies, Dr. Coca, before the National Congress of State Monopolies (Congresso nazionale Dipendenti Monopoli di Stato) on November 14, 1947, **Italy** will be able to produce, beginning March 1948, 3,200,000 kg. of **tobacco** per month, production, in comparison with 1938-39, being increased 40 per cent.

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In 1947, the **tobacco** crop in **Roumania** exceeded 20 million kilograms, of which half has been assigned for export. In the same year, the yield per hectare amounted to 800 kg.

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In 1947, 3,600 tons of **hops** were picked in **Bavaria**; 2,700 tons, about 70 per cent. of the crop were exported. The chief buyers of Bavarian hops were the United States, United Kingdom, Denmark, Belgium, France and the Netherlands. The official price stood at 6,400 RM per ton.

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The **game** season 1947 is expected, in **Hungary**, to produce between 400,000 and 500,000 hares. The export is estimated as follows:

Austria 300,000; Czechoslovakia 100,000; Switzerland 40,000.

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In view of the abundant **olive oil** production in **Portugal** the government has decided to create an olive reserve for 1948-49 consumption; a smaller production is anticipated for this period.

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The **Rostov agricultural machine** factory which has taken a large part in the mechanization of Soviet agriculture, produced 12,000 units a year before the war. The Rostov factories, which were destroyed during the war, are now rebuilt and are putting a new type of agricultural machine on the market, the 'Stalinets-6', which gave good results in the autumn of 1947 when 1,000 units were tested. The Rostov factory for agricultural machinery is so equipped that it may produce the most complex type of machinery such as combined reaping and threshing machines.

ANIMAL PRODUCTION



Concise report of the Greek Ministry of Agriculture on the cattle and smaller live- stock in Greece

Present situation

The following table shows the present number of cattle and smaller livestock in Greece, and the changes which have taken place since the pre-war period :

Cattle and smaller livestock in Greece in 1947 compared with 1938.

Species and type of animal	Number of head in 1938	In 1947	Percentage in relation to 1938
(1) Indigenous oxen and cows	944,135	589,000	62.4%
(2) Milch cows from improved breeds.	30,000	20,000	66.7%
(3) Buffaloes , . .	67,352	41,000	60.9%
(4) Sheep	8,138,772	6,500,000	79.9%
(5) Goats	4,356,120	3,400,000	78.1%
(6) Pigs	429,748	430,000	100 %

The decrease in livestock is due to the havoc caused through the war, difficulty in obtaining feedingstuffs, and particularly to commandeering by the enemy.

The decrease in cattle numbers is greater than in the case of goats and ewes, as the occupation troops generally seized the larger livestock since they were more accustomed to eating beef. The decline in livestock numbers because of the war was more severe than it now appears, but since the liberation of the country (end of 1944) part of the livestock has been replaced.

Directives, measures already taken and present problems

The measures for improving cattle and smaller livestock aim at establishing an indigenous stock adapted to the different economic and natural conditions of each region, chiefly by means of selection and, where conditions are particularly suited to stock-raising, by cross-breeding.

Other measures have been taken, to augment

feedingstuffs by extending the cultivation of forage crops and by the rational use of grazing-grounds.

Improvements have been made in breeding practices by using better sires.

In the Athens and Salonika region, where improved milch cows are raised, artificial insemination has been employed for the last two years, the semen being obtained from bulls of the Alpine grey breed ; better and more rapid breeding results are thus obtained.

Present livestock problems in Portugal

(Abstract from the Report of the Portuguese Delegation to the International Animal Production Meeting, Zurich, 1947).

Livestock problems now requiring attention in Portugal include :

(a) Increase in numbers of cattle, sheep and pigs ;

(b) adequate and regular supply of feedingstuffs;

(c) improvement of breeds ;

(d) economic protection of production.

Cattle stocks urgently require to be increased in order to reduce the present shortage of meat and at the same time, to augment milk production for direct consumption and for industrial purposes.

Consequently, there would be more hides available for the tanning industry and imports would be reduced, while continuing heavy exports of sheep and goat skins.

Agricultural conditions and the economic and technical assistance given to stockowners foster sheep-raising, which is directed towards the production of meat and to obtaining a greater quantity of fine wools for clothing, imports of which far exceed the value of the coarse wools exported.

The problem is not so complex in the case of pigs, as supplies can be had from the colonies, and a considerable advance has been made in the mode of raising pigs for industrial utilization.

The agricultural environment and climatic conditions in the greater part of Portuguese territory are not propitious for a regular and adequate forage production. These factors are outside human control, and to a certain extent, hinder breed improvement work.

Besides irregular fodder production, the distribution of feedingstuffs is unequal, with alternate periods of brief over-abundance and marked scarcity, of much longer duration.

The official technical action of the Veterinary

Services, in general, is carried out with a view to ensuring the sanitary protection of livestock, breed improvement and the full utilization of animal products.

Portugal, fortunately, has not suffered from the ravages of epizootic diseases. The control of contagious diseases, which break out suddenly, is organized, and biological products for therapeutic and prophylactic uses are available. Considerable progress was attained in the national industrial preparation of serums, vaccines and allied products during the war, and an effort is being made to render this industry independent. Infectious and parasitic diseases of the insidious type are being given particular attention, and systematic control measures are being undertaken.

Tuberculosis, for instance, has been practically eliminated in dairy cattle; a special service was set up in 1931 to combat this disease — about 6 per cent. of the animals were found to be infected and consequently the 'test and slaughter' system was applied. Today, it is unusual to find a tuberculous animal.

The control of brucellosis and mastitis is more complicated owing to the special form of the development of these diseases, and the difficulty in having the requisite sanitary measures carried out effectively.

The artificial insemination services which have gradually introduced this new method of breeding combat the causes of sterility and propagate general rules of hygiene and prophylaxy.

The municipal veterinary surgeons are under the technical supervision of the State Department of Veterinary Services. In this way a close check is kept on livestock conditions and the rapid mobilization of technicians and the application of emergency measures are facilitated.

In case of necessity, the municipal veterinary surgeons also collaborate in breed improvement work.

Special laws govern the operating of breeding centres and the selection of breeding animals; some of these animals are ceded by the Government to stockbreeders on the undertaking that they will utilize them according to the instructions given by the technical services.

Investigations are carried out at the stockbreeding stations on animal biology with a view to intelligent breeding and utilization of livestock. Some of this research work effected at the National Animal Husbandry Station, the largest in the country, is very important from the physio-zootechnic standpoint.

In horse-breeding, performance tests have been introduced in order that breeding animals may be judged, as far as possible, from definite data, and

not from the superficial impression of the judge.

Besides data on training, tests on road and track, physiological and morphological objective changes, nutritive value of the ration, etc., carefully assembled, a series of tests have been started to ascertain the degree of resistance to fatigue, by methods other than simple inspection.

To this end, the proportion of certain elements in the blood of Equidae was sought, in order not only to establish the normal content, but also to ascertain the variations which occur as a result of the stress exerted.

Several tests have been carried out to determine the inorganic phosphorus and lactic acid content, the alkali reserve, pH of the blood and glycemia and creatinemia variations, during rest and moderate and intensive work.

These experiments require to be continued in order to clear up some obscure points regarding the physiology of fatigue so that the results may be utilized in judging and selecting breeding animals.

The methods and technique employed and tested results are described in reports, memoranda and papers, some of which have already been published.

At the Animal Husbandry Station particular importance is attached to feed problems as the country is normally short in fodders. For this reason, besides seeking other sources of feedingstuffs, an endeavour is being made to better the utilization and economic yield of the natural resources.

The Portuguese Government is striving to give economic protection to agricultural production by measures which inspire confidence and encourage the producers to develop their initiative and to improve their work.

In the case of animal production, this task devolves on an organization for economic coordination, the "Junta Nacional dos Productos Pecuarios". Its main duties consist in controlling the activities of associations of producers, trade and industry for meat, milk, dairy products, wool and hides, and in regulating prices in order to guarantee an adequate return for the products and to prevent sudden fluctuations upsetting the economic balance.

On the technical side, the services of this organization collaborate with the State veterinary services in all sectors and, on their own account, carry out demonstrations and propaganda work.

Striking results have been obtained with the extension of up to date methods of shearing, folding fleeces, storing, and grading of wools.

The measures taken by the said organization to check the causes of depreciation in the value of hides, and to improve methods of skinning, the preparation, salting and preservation of the hides, have been so effective that excellent raw material is now available for industrial purposes.

Stockfarming in Morocco

(Abstract from the report presented before the Animal Husbandry Congress in Zurich by the Animal Production Division of the Protectorate of Morocco, Rabat, 1947).

Forage in Morocco

From 1928 to 1934, 40,000 hectares have been planted to *Opuntia ficus indicus* (prickly-pears). The fleshy joints of this plant serve as feed for the herds and flocks during the periods of scarcity, and, at the same time, the roots, by fixing the soil, act as a check to erosion.

Since improvement of the natural pastures did not suffice to meet fodder requirements, cultivated or temporary meadows were established. The research centres examined different forage species in order to ascertain those most suitable for Morocco. Napier grass (*Pennisetum purpureum*), kikuyu grass (*P. clandestinum*), *Panicum* spp., Rhodes grass (*Chloris gayana*) and *Oryzopsis miliacea* have been grown wherever irrigation, even on a small scale, has been possible. The cultivation of forage plants has been fostered. Among the perennials, lucern is the ideal forage, when grown on good soil and irrigated, it furnishes 10 cuts a year. Forage maize for ensilage and berseem for green feed during the winter give good yields and supply the soil with fertilizer elements.

Forage production is linked with the water problem. Barrages have been erected, and small hydraulic projects have been given close attention. Water is recuperated wherever possible by pumping or gravitation.

In Morocco, the use of chemical fertilizers is being made popular by means of propaganda, as in this way forage yields are improved both in quantity and quality.

Steps have been taken to improve watering facilities for the herds. Hundreds of water-holes have been drilled. The native flocks are always in the open and shelters of the Australian type (walls 2 metres high arranged in the form of a cross) have now been constructed to protect them from the cold.

Zootechnic improvements

(1) Breeding work has been undertaken with selected breeding animals, all defective sires being eliminated.

(2) In milk production, selective breeding of the Meknès black piebald breed has given very encouraging results.

(3) Model sheep-runs have been established for improving the condition of the flocks, and also centres for breeding animals of the best types of local breeds in order to improve conformation and wool qualities, and milk, meat and wool production by crossbreeding.

(4) The local breeds have proved to be very adaptable since they benefit rapidly by crossbreeding with better types. The approval of the Animal Production Division has to be obtained before breeding animals can be imported. By means of financial assistance from the Administration, the stockbreeding associations subsidize the importation of breeding animals (2,000,000 in 1947), organize itinerant and other shows.

The acclimatization of imported breeds is studied at State stock farms which supply stockbreeders yearly with pedigree breeding animals raised in Morocco.

A Herdbook for pedigree cattle is kept at Rabat by the Animal Production Division. The present policy aims at standardizing production. The Schwyz breed, raised for milk production, is very popular in the regions of Casablanca, Rabat and Meknès. The Montbéliard breed is the favourite with the stockbreeders in Marrakech. The Tarentaise breed has proved suitable for all regions, but particularly so in the Fès and Taza areas; it gives good yields and is easily crossed with the local breed. The Charolais in south Doukkala has produced good meat yields (at 20 months, 250 kg. net of top grade meat). The Limousin breed, recently introduced, has become well acclimatized and, crossed with the native cows, produces calves of outstanding quality.

The Moroccan ewes give very good results when crossed.

The Moroccan horse belongs to the Barbary breed, improved breeding was carried out by the Remount Service and later by the stud-farms operating under the Animal Production Division.

Only European breeders raise pigs.

Control of animal diseases.

Measures for checking the diseases of Moroccan livestock have been carried out by the Animal Production Division since the setting up of the protectorate. The research laboratory of the Division in Casablanca has done most valuable work in studying infectious and parasitic diseases. A free advisory service attached to the veterinary stations is available in every stockbreeding inspectorate. Every year the animals are vaccinated against anthrax and sheep-pox (1,500,000 treated in 1946).

Rabies is continually on the downward trend. Brucellosis is being effectively controlled by inoculation of vaccine in fatty excipient. Strict measures have caused glanders and farcy to disappear.

An institute for the control of foot-and-mouth disease is being set up in Rabat.

Internal parasitic diseases of cattle are being successfully controlled by chemotherapy. The control of external parasites (in particular scab) is

being actively carried out, with the extensive use of dipping tanks. In 1946, 2,000,000 sheep were dipped. Every very large scale prophylactic measures are taken against the warble fly (*Hypoderma bovis*); last year, 800,000 cattle were treated (by incision of the swellings or 'warbles' and extirpation of the maggots), a very marked improvement in the hides being obtained.

MOROCCAN LIVESTOCK FIGURES

	1920	1945
Camels	98,500	140,000
Horses	44,500	84,500
Mares	82,500	145,900
Mules	66,500	169,000
Donkeys	414,600	873,800
Cattle	1,494,000	2,679,000
Sheep	5,709,000	10,860,000
Goats	2,078,000	6,857,000
Pigs	32,000	95,000

In short, stockbreeding is progressing in Morocco.

The use of penicillin in veterinary medicine

Extensive experiments have been carried out on the use of penicillin in mastitis. It seems that the best results were obtained by the injection of 100,000 units, rather than with a smaller dose. When infection was due to *Strept. agalactiae*, 75 to 80 per cent. of the cases were cured, but with staphylococcus infection, the percentage recovery was not so high.

In cases of actinomycosis in man, cures have been reported after treatment by intramuscular injection.

With anthrax, success depends on the rapidity with which the affected animal is given an injection. The extensive use of penicillin is indicated for feverish animals in a herd where a case has been reported. A suitable treatment appears to be intramuscular or intravenous injections at a dose of 1,000-2,000 units per 5 lb. of live weight, and repeated at intervals of five hours according to conditions.

Cases of black quarter can be given non-oral treatment or injections direct into the lesions.

In cases of necrotic diseases in cattle (foot-rot, calf diphtheria, necrotic dermatitis), penicillin is effective either by non-oral treatment, or by local injections using a dose of 50,000 to 100,000 units, at the same time operating, if necessary.

In infections caused through retention of the after-birth, excellent results have been obtained by introducing a capsule of 100,000 units of penicillin into the matrix. For cystitis and pyelonephritis, intramuscular injections of 300,000 units, repeated every four hours until recovery, have been tried.

All cases of Texas fever treated with 100,000 units in repeated injections in 24 hours, were cured.

The principal disorders of the horse in which penicillin can be used are strangles, tetanus, ulcerative lymphangitis, fistulous withers, acne.

With sheep and goats, penicillin can be employed for arthritis, lamb dysentery, black quarter, black disease, caseous lymphadenitis.

Swine-fever can be cured by intramuscular injections at intervals of six hours.

For the dog and the cat, its use is indicated in distemper, leptospirosis, streptococcus infections, and pustular dermatitis. In canine pleuro-pneumonia, excellent results have been obtained with a dose of 8,000 units intravenously every three hours until six doses have been given.

With birds, success has been reported in the treatment of fowl cholera, psittacosis and aspergillosis by injecting 500 units every three hours intramuscularly.

(Excerpt from an article by Dr. L. TOBBACK, in the *Bulletin agricole du Congo belge*, Vol. VIII, No. 2, 1947).

Artificial insemination in the Netherlands

(Résumé of an article by Dr. Th. Stegenga, (*Veterinary Adviser for artificial insemination*) in 'Maandblad voor de Landbouwvoorlichtingsdienst', No. 11 (November 1947).

Already before the war various Dutch veterinaries were interested in the application of artificial insemination. During the war organized application was started in various places in the provinces of Overijssel, Friesland and Groningen. But since the liberation farmers are interested in artificial insemination in a way as seldom has been shown, for a new kind of cattle breeding.

Interest is so great because it is hoped to decrease sterility which occurs more and more and because an improvement in cattle is expected from it.

Artificial insemination and sterility

No doubt artificial insemination can help to decrease the number of infertile cows. Many cows stay infertile temporarily or permanently as a result of infections from natural mating. However, it is not right to think that with artificial insemination the problem of sterility is solved. Besides infections through breeding, other infections may

occur which cannot be prevented by artificial insemination. As the infections from natural mating, however, play a great part, the application of artificial insemination is very desirable in many parts of our country. We have to work very carefully, however, because there is a danger that the semen may remain outside the organism, resulting in decreased fertility. The greatest attention should be paid to the collection and conservation of the semen and to the choice of the bull. Insemination with the semen of an infected bull is as dangerous as natural breeding with an infected bull as the infection is passed on with the semen.

Improvement of stock and artificial insemination

Artificial insemination enables us to inseminate 500 to 1,000 cows per year with the semen of one bull; this is 5 to 10 times as many as through natural breeding. This is possible as the material of one ejaculation is used for several animals. This number can be increased by diluting the semen with certain liquids which are not harmful but even raise the duration of conservation of the semen. Good semen can be diluted from 1 : 10 volumes with these egg yolk liquids. The semen remains alive longer than when undiluted and can also stand changes of temperature much better.

Disappointments

In 1946 the results of artificial insemination did not come up to the expectations of various societies. Insemination was often unsuccessful, the costs were too high or otherwise binding Government prescriptions proved to be a handicap.

We will not cite any more mistakes but give a general idea of the way in which artificial insemination should be carried out to obtain the best results.

In order to reduce costs and to minimize bad results the societies for artificial insemination will have to work with several bulls, preferably 3 or more. The number of bulls registered per society should be no less than 1500 to 2000. Such a society also offers a better opportunity for a good division of labour amongst the inseminators. For the success of artificial insemination the person who executes the work, the inseminator, is of primary importance. He must know his work very well. It is also necessary for him to have means of transportation so that he may do his work efficiently. In order to solve and prevent difficulties it is essential that the daily direction be entrusted to a veterinary surgeon who also has to see to the treatment and feeding of the bulls. Through regular tests he will often be able to discover deterioration in the quality of the semen at an early stage. Besides this he has constantly to be kept informed of the results of the inseminations. For this reason and also for the requirements of the

herd-books the inseminator will have to have an efficient administration.

Legal prescriptions

As veterinary surgeons only are allowed to carry out artificial insemination without a special consent and this consent is only given to societies, farmers who want to apply artificial insemination have to organize themselves into a society. This society has to request permission for the application of artificial insemination to the Provincial Commission for supervision of the application of artificial insemination, the president of which is the veterinary surgeon and the secretary, in most provinces, the director of the health service for animals.

The Provincial Commission sends this request with its advice to the Central Commission, the President of which is the Director of Veterinaries.

There are uniform statutes and rules for artificial insemination societies. If the statutes and rules of a society being established differ from those models, they have to be sent to the above-mentioned Commission for approval. The society has to state which veterinary is to act as supervisor.

If the approval has been obtained the work can be started; the application has to take place by a qualified inseminator.

The bulls chosen have to come up to the following standards :

(1) They should be registered in the 'N. R. S.' (Netherlands Herd-books) with at least b. for general appearance or in the 'F. R. S.' (Frisian Herd-books) with at least 73 points.

(2) They should come up to certain production standards as laid down by the Provincial Commission.

(3) They should be healthy and produce good semen according to a certificate from the director of the health service for animals. (The bull must be free from tubercular and other infections).

Furthermore, there are some binding definitions, among others :

(1) The society puts itself under the supervision of the Provincial Commission for artificial insemination.

(2) The members have to use artificial insemination with all their animals. (They are, therefore, not allowed to apply natural breeding).

(3) The members should go in for milk recording. (An exception should be made for the smaller farms).

Farmers are greatly interested in artificial insemination. Information on this matter is extremely important. One has to be aware of the possible difficulties and of the costs.

The Director of Veterinaries has, therefore, pointed out in a circular letter to the various consultants that the Provincial Commission for artificial

insemination shall be responsible for providing information concerning artificial insemination.

This means in practice that information will be given mainly by the veterinary advisers or by the director of the health service for animals.

Artificial insemination in Switzerland

In Switzerland, the aim is to breed dual-purpose cattle. In view of Swiss economic and climatic conditions, an endeavour is made to produce cattle with marked dairy qualities, but which at the same time will be good beef yielders and excellent utilizers of roughages or coarse fodders. This complicates the problem appreciably, since the planned use of the limited number of breeding animals would not ensure successful results in every case. Other difficulties are the shifting and relatively low concentration of Swiss cattle stocks. How could artificial insemination be carried out in the Alpine valleys in the winter? And, in the summer, how could this method be applied when the cattle are located in the mountain pastures?

So far this new method has been introduced into regions where there are no obstacles to circulation. Experiments on a large scale application of artificial insemination indicate that it will only be profitable if carried out on a cooperative basis. Insemination centres, grouping some sires and several hundred cows and heifers, will have to be set up. A fairly large staff will have to be kept for collecting the semen, examining and preserving it, and for its introduction into the vagina. Moreover, considering the brief heat period and the still limited possibilities of preserving the semen, these operations will have to be carried out rapidly. Operating costs will be increased if the personnel is only employed a few months in the year.

The foregoing paragraphs only treat on the technical aspects of artificial insemination, and do not take into consideration the economic outcome. It is evident that stockbreeders and the stockbreeding associations concerned are somewhat apprehensive about the introduction of this method. In agriculture, one of the main problems and one of the most difficult to solve is that of the mountain stockbreeder, whose living depends almost entirely on the sale of cattle, the raising of breeding animals being one of his chief resources. Assuming the theoretical case of a widespread use of artificial insemination in Switzerland, this method would be most damaging to a considerable number of the agricultural popula-

tion. This aspect of the question, therefore, should not be disregarded.

The artificial insemination problem in Switzerland was examined in 1942 on occasion of a meeting organized by the Swiss Animal Husbandry Association. The results of this examination were put in concrete form in a Federal Council Ordinance and in an ordinance of the Federal Department of Public Economy on the artificial insemination of farm animals. These ordinances restrict the use of the said method to the following cases:

- (1) Danger of infection at the time of service (when other methods are inadequate);
- (2) When, because of epizootic regulations, public service depots are closed;
- (3) When valuable proved sires find difficulty in mating normally;
- (4) For the purpose of scientific research carried out by the laboratories or institute specially set up.

The present legislation appears to meet practical needs, and will be revised and adapted progressively as eventual new important factors arise.

(Excerpt from a lecture by Mr A. Kiener, agricultural expert, Chief of the Cattle-breeding Section, Federal Division of Agriculture, Bern).

Prophylaxis for foot-and-mouth disease in Switzerland

The Federal Veterinary Office of Bern, consequent on the appearance of various cases of foot-and-mouth disease in some districts of Bern Canton, has propagated the following measures:

"In order to prevent, to the fullest possible extent, the spread of foot-and-mouth disease, all material used in the packing of feedingstuffs obtained from abroad (grain meals, bran, millers' offals), should be treated as follows:

"(1) The feedingstuffs should be transferred to new and clean sacks, preferably of paper. (2) The original packing material should be burnt or disinfected. The sacks can be disinfected by soaking them in a hot 5 per cent. solution of sodium carbonate for 12 hours (5 kg. in 100 litres water) or in a 1-2 per cent. solution of caustic soda (1-2 kg. in 100 litres water). Likewise, premises where the feedingstuff has been kept, as well as all objects and clothing with which the sacks have come in contact, must be disinfected with one of the aforesaid solutions.

"Stockowners may also, as a protective measure,

heat the feeds before giving them to their animals. The virus which causes foot-and-mouth disease is usually destroyed rapidly at a temperature of 60 to 80° C. In some cases, the feedingstuffs may be heated in small quantities in the farm ovens or driers. Risks are reduced to a minimum if imported feeds such as grain meals, bran and South American millers' offals, are cooked for a few moments before being given to pigs and hens, as also loose grains and oilcakes for large livestock. Lastly, the stockbreeders who use imported feedingstuffs, are advised to hose out thoroughly and disinfect the stable passages, the stalls and feeding-troughs at least once a week".

International Congress on the physiology of animal reproduction and on artificial insemination

The first international congress on the physiology of animal reproduction and on artificial insemination, which has already received the support of scientists the world over, and which also will have that of FAO and UNESCO, is to be held at Milan (Italy) June 23 to 30, 1948.

Those taking part in the congress will mainly study those problems relating to biology, animal husbandry and the pathology of animal reproduction, the application of artificial insemination to animals, the regulation and organization of artificial insemination and animal reproduction. Various international exhibitions concerning documentation, publicity, chemical products for laboratories, scientific and precision instruments, disinfectants, will be especially organized for the benefit of those taking part in the congress. There will also be a show of outstanding breeding stock.

Mr. Neil J. M. Yeates, who is taking a two-year experimental course at the School of Agriculture in Cambridge, England, has shown that light can effect the reproductive habits of sheep. Keeping some animals in pens totally shut off from daylight he succeeded in creating, by means of electric illumination, light conditions corresponding to those of their breeding-time in other seasons of the year.

As the mating-time of sheep in England is in winter, the animals were rationed to 13 hours per day of light in October, increasing to 21 hours in January. Whereas sheep kept under normal conditions mate in September, the test animals began to mate in May and their lambing season was in October and November.

AGRICULTURAL INDUSTRIES



The textile industry in Poland

The deliveries of textile raw materials as according to the various trade agreements Poland signed with the U. S. S. R., Sweden and France, as well as the purchases made on the open market in the United States, United Kingdom, Netherlands, Brazil and in Belgium, have enabled Poland to form winter stocks.

Cotton is the main item, 5,191 tons having been obtained from Russian, American, English and Egyptian sources; wool comes second (2,500 tons of fleece wool and 153 tons of fine wool from England); with flax third, 1,232 tons (U. S. S. R., Belgium and the Netherlands).

Nearly all branches of production increased in the autumn of 1947. In general, the figures fixed in the national program have been exceeded, except in the case of jute yarn (83 per cent. of anticipated production), cotton fabric (91 per cent.) and woollen cloth (99 per cent.). In other sectors, production attained between 103 and 178 per cent. of the proposed level. In the wool industry the increase in cloth production (from September 1946 to September 1947) amounted to 52 per cent., i. e., over a million metres.

Silk industry

The 1947 silk production in France has increased by 20 per cent. compared to the previous year's production, and reached the total of 500,000 kg. of unspun cocoons which is equivalent to 42,000 kg. of silk.

France has also imported about 275,000 kg. of silk in 1947 of which 190,000 kg. of Japanese silk came mainly from stocks held in New York; 30,000 kg. of Chinese silk and 55,000 kg. of Italian silk were also imported. 1946 imports amounted to 500,000 kg.; the drop which has been recorded is caused mainly by the barriers against the import of so-called luxury articles and by the interruption, since August, in the granting of dollar import licences by the French Administration except in those cases where there will be re-export to dollar zones.

* * *

An Italian institute for silkworm-breeding, Istituto Serico Italiano, has recently been formed in Italy by a group of spinning-mills in consortium, with the aim of fighting against competition and of increasing the output of the factories so that it may be possible to combat more adequately the present silk crisis. This new entity will make a big contribution to the solution of the problem of a commercial and export organization in Italy which was lacking up until now in Italian industry.

Silk in the Belgian Congo

A new program for the spinning and weaving of natural silk in the Belgian Congo has just been drawn up. Equipment and plants will be ready by the next season.

As is known, the cultivation of the mulberry and silkworm breeding had been undertaken on an experimental scale at the Mont Hawa Research Station, and during the war, in 1944, a consignment of silk for parachutes was delivered to the United Kingdom.

* * *

Antwerp recently received 1,500 kg. of raw silk from the Congo. The quality is said to be equivalent to that of Japanese silk.

* * *

Since 1920, Poland has joined the silk-producing countries. In 1924, the Central Sericulture Station in Milanówek began studies and experiments on the mulberry and on the possibilities of silkworm breeding in Poland. By 1939 there were 2,400 mulberry growers. Sericulture suffered severely through the war and emigration towards the west. In 1947, silkworm breeders numbered 1,700. There is also an extremely active Sericulture Institute in Milanówek. On August 15, 1947, the Cocoon Purchasing Centre had bought from silkworm breeders 13,659 4-litre measures of cocoons. The 1947 output was approximately 30 per cent. higher than that for 1946. Because of the liberal policy observed in regard to prices and the increased number of students attending the Milanówek Sericulture Institute (1,035 in 1946 and 1,700 in 1947), it is expected that the 1948 yield will be double that obtained in 1947.

Wool industry

Production of greasy wool, in Hungary in 1947 is estimated at 1,800 metric tons as compared with 1,500 tons in 1946. The present annual capacity

of the country's 35 mills is 10,000 metric tons of raw wool.

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Turkey's wool production for 1947 is estimated at 20,000 metric tons, which is about 20 per cent. less than that of the previous year. 1946 imports of unwashed wool, all of which came from Australia, amounted to some 4,000 tons as compared with 2,000 tons in 1945. Washed wool imports, coming from Australia and the United Kingdom, increased from 697,973 kg. in 1945 to 893,118 kg. in 1946.

* * *

A National College of Wool Technology and Research is to be established in England, with a view to providing the highest level of training, which is not available now, and cannot be efficiently or economically provided by any one educational authority. Besides full-time post-certificate courses of probably two years' duration for holders of Higher National and City and Guilds Certificates, refresher courses of shorter duration will be held for students employed in the industry.

Chemical fertilizers in Italy

During the 1947-48 season 115,000,000 kilograms of nitrogen, which is the equivalent of about 690,000,000 kg. of nitrogenous fertilizers, will be available; this amount is slightly below the prewar consumption.

32,000,000 kg. of nitrogen were produced between July and October 1947 and Italian factories foresee a production amounting to 75,000,000 kg. between November 1947 and June 1948; 10,000,000 kg. of imported nitrogen must be added to this amount.

It is believed that 1200 million kg. of superphosphates may be produced from the 6000 million kg. of phosphate which are expected during 1947.

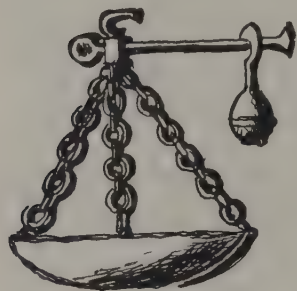
New German synthetic fat discovery

We understand that the margarine factory, Wagner & Co., in Elmshorn, near Hamburg, has successfully finished its research after many years to produce a bio-synthetic fat after the method of Prof. Lembke. The raw material is whey or pulp wash, up to now quite a useless waste product in paper mills. Small organisms, it appears, work as fat producers and within 24 hours it is possible to gain 50 to 60 kg. of fat out of 10,000 litres. The fat contains the vitamins A and D in

a high percentage and is fit to be used in the production of margarine, the statement says.

The world's principal supplier of palm-oil is the Belgian Congo, whose production of palm-oil for 1947 is expected to total 138,000 tons. Production in 1948 is estimated at 165,000 tons.

ECONOMICS AND MARKETS



Notes on Overseas Resources Development Bill

(Sent by the United Kingdom National FAO Committee).

I. — By accepting the recommendations contained in the Final Act of the United Nations Conference at Hot Springs in 1943 and by accepting the full responsibilities of membership of the Food and Agriculture Organization, H. M. Government has pledged itself to act promptly and vigorously to do its part towards promoting and encouraging wherever possible, increased supplies of foodstuffs and primary products to alleviate the present world shortages.

II. — One of the steps which is being taken by H. M. Government is the establishment through the Overseas Resources Development Bill of two public non-profit making Corporations, financed from the Exchequer responsible to Parliament, one of the principal aims of which will be to increase food production, whether directly on the lines of the East African Groundnuts scheme, or indirectly by encouraging and providing more equipment and fertilizers for existing producers. The Bill has been warmly welcomed by all British political parties. These Corporations reinforce the drive which the British Government is developing as quickly as possible to give effect to the recommendations of the Development and Settlement of Land for Food Production as set out in Section XXI of the Final Act of the Hot Springs Conference. These recommendations are :

A. That each nation undertake :

(a) To survey its land and water resources to determine (1) in what areas, if opened to settlement, production of food could materially be increased ; (2) what areas, if supplied with additional production facilities, such as water supply for irrigation, improved drainage, or by the correction of deterrents to production, could materially increase their production of food ; (3) the kind, extent and economic possibility of developments necessary for this increase in food production ;

(b) To develop on the basis of these findings policies of settlement and development of a programme applicable to the economic, social, agricultural, and geographical needs of the nation of which it is a part, considering :

(i) Physical conditions including (1) soils and climate, (2) health conditions, (3) transportation, and (4) clearing, irrigation, or drainage needs ;

(ii) Settlement policies, including (1) the type of farming systems to be established, (2) the scale of working by plantations, small-holdings, or co-operative organization of areas for production, (3) measures to prevent speculation and exploitation, and (4) financial and other assistance ;

(iii) Conservation measures for sustained production of the area, including (1) agronomic and management practices, (2) conservation structures and practices (3) protection against alkali accumulations, and (4) measures of forest conservation and reforestation ;

B. That the necessary implementation of these policies and programmes be given through appropriate measures applicable to conditions and needs of each region or area, including :

(a) A comprehensive engineering service, providing for developments affecting the entire area, such as transportation, improvement of sanitary conditions, water-storage reservoirs, drainage channels and flood protection ;

(b) Development of a programme of sound land use, including conservation measures ;

(c) Provision for technical assistance to individual producers in planning and developing the areas under their supervision ;

(d) Provision for financial assistance to settlers for further development and operation.

(e) Provision for marketing produce, including necessary processing and preservation ;

C. That the permanent organization recommended in Resolution II provide assistance by such means as :

(a) The interchange between nations of pertinent data and information on erosion and methods of control, land improvements, etc.

(b) The interchange between nations of technically-trained personnel to assist in the development of conservation research, etc.

III. — The recommendations are of vital importance now. The population of the world is increasing at the rate of 20 millions a year while for many basic foodstuffs world crop acreages remain below pre-war levels and in many countries employment in industry tends to grow at the expense of employment on the farms. In such circumstances any measure to increase food production is a contribution to the solution of the basic world problem of our day and age.

IV. — The two Corporations to be established through the Overseas Resources Development Bill will be known as the Colonial Development Corporation and the Overseas Food Corporation. The Colonial Development Corporation and the Overseas Food Corporation. The Colonial Development Corporation will have borrowing powers up to £ 100 million. It will be responsible to the Secretary of State for the Colonies and will be empowered to undertake any productive development scheme within the Colonial territories either by direct management and control or in the capacity of managing agents, or indirectly by providing financial or material assistance to existing companies or Governmental bodies. Its activities will be confined within Colonial territories but its scope will not be limited to the production of foodstuffs.

V. — The Overseas Food Corporation will have borrowing powers up to £ 50 million. It will be appointed by and responsible to the Minister of Food and will be empowered to operate in any territory outside the United Kingdom. As its name implies it will confine its activities to the furthering of food and agricultural production.

VI. — Both Corporations will be expected to show balanced accounts over a series of years. While they will have complete discretion in the conduct of their day to day business, they will be under obligation to provide such information and to accept such general directions affecting the public interest as to ensure that the policy being followed by each Corporation is in line with the wishes of the Government.

VII. — Both Corporations will be under Statutory obligation to consult with the local governments concerned before starting new schemes and it will be their duty to have particular regard to the interests and welfare of the inhabitants of the territories in which they operate.

VIII. — The introduction of mechanized farming into underdeveloped territories in the Colonial Empire should check the tendency to decreasing productivity in some areas and it will provide the opportunity to bring primitive farming communities knowledge of improved methods of cultivation and a general improvement in social and economic conditions.

IX. — The first project which will be administered by the Overseas Food Corporation, the East African Groundnuts scheme, has already been launched in Tanganyika, and despite the inevitable difficulties of the first months of a new venture, a small area will be planted this year. This scheme, small now in its initial stages, is planned to extend to 3 ¼ million acres of East African virgin territory and to produce upwards of 600,000 tons of groundnuts annually when it is in full operation.

X. — The world shortage of fats is such, however, that this scheme, large as it is, will go only a short way towards meeting needs - greatly increased production elsewhere is also necessary as quickly as possible.

XI. — The first duties of the Corporation as far as food production is concerned will be to formulate plans to augment supplies of the basic foodstuffs which are most needed whether for local consumption or for export. Their work will be to the mutual advantage of the producing and the consuming countries and incidentally to the general expansion of international trade.

Economic situation in Poland

Poland's economic situation was the subject of a statement by the Prime Minister during the present autumn session of the Polish Parliament. Achievements in the first nine months of 1947 show that the yearly production plan of the State-controlled industry, as a whole, will be fulfilled and even exceeded.

The power, coal, iron and steel, metal, electrical, sugar, timber, brewing and soft drink industries will exceed their targets, whereas the leather, cotton, food and food preserves industries will not fully achieve their targets.

It is expected, the official statement says, that the target in 1948 will be 26% higher than in 1947. The greatest increases in output are anticipated for the consumers' goods industries (cotton, leather, food, etc.) as well as coal.

The increase in industrial production, especially with regard to consumers' goods, brought, as a result, an increase in the trade turnover of industrial articles. Nevertheless, the demand exceeds the available supplies in cotton goods, some metal articles, paper articles, electric bulbs, leather goods, a number of chemical articles.

At the same time, a number of articles which until recently were in short supply, are beginning to appear on the market in sufficient quantities. These are woollen, metal, electrical, paper, mineral, chemical and timber products.

Parallel to the process of saturation of the market, a fall in the prices of industrial goods of from 10 to 30 per cent, was brought about by widely publicized sales at low prices of industrial articles.

With regard to the turnover of agricultural articles, the important role of the Provisions Fund has become apparent. By the decree of May 23rd, 1947, this fund has received a special authorization to purchase grain for rationing purposes and for the free market.

The Provisions Fund, using State-controlled commercial centres, licensed co-operative societies and private purchase agencies, and applying to a considerable extent chain purchases (coal, textiles, leather, cement, etc.) has fulfilled the four-months' plan of purchases, acquiring in the period from June to September, 1947, 258,000 tons of grain, while the plan anticipated the purchase of only 230,000 tons.

Owing to this campaign, as well as to payment of ground tax in kind (in this instance in grain) the import of Soviet corn (330,000 tons up to the end of 1947) and other imports - the food situation should not cause any anxiety.

Import of seed potatoes into Switzerland

The import of seed potatoes into Switzerland has been centralized in the 'Schweizerische Genossenschaft für die Saatkartoffelversorgung', an organization which was founded because of wartime circumstances but which is still working now as the post-war position also is not so favourable that seed potatoes can be freely imported.

During the season 1946-47 a total of 40,030 metric tons was imported from such countries as :

Netherlands	14,940 m. t.
Denmark.	11,410 m. t.
Czechoslovakia	9,700 m. t.
Poland.	1,280 m. t.
Sweden	1,170 m. t.
Luxembourg	990 m. t.
Austria	310 m. t.
Great Britain.	230 m. t.

18,080 m. t. of early varieties were imported, 4,670 m. t. of 'middle' early ones, 60 m. t. of late ones and 17,220 m. t. of industrial potatoes. The 'Bintje' variety accounted for 37.4% of the total.

In 1946 the field tested area was 1,385 ha. (1945 = 2,780 ha) of which 60 % was of the 'Bintje' variety, whereas 'Ackersegen' scarcely reached 10%.

Regarding the import of seed potatoes for the season 1947-48 the following quantities are said to have been bought (total 72,900 m. t.):

Netherlands	44,000 m. t.
Denmark.	21,500 m. t.
Czechoslovakia	3,300 m. t.
Poland.	3,300 m. t.
Great Britain.	800 m. t.

In 1947, 2,550 ha. were field tested in Switzerland itself, from which about 20,000 m. t. of seed potatoes will become available so that the total available first class seed potatoes stock will be over 80,000 m. t. of which 50% 'Bintje', 20% 'Ackersegen', 10 % 'Vorán', 20 % 'Ersteling', 'Erdgold' and 'Arran Banner'.

Benelux to reduce import duties

The Benelux countries (Belgium, the Netherlands and Luxembourg) have agreed to suspend partially or completely from January 1st, 1948, import duties on a number of important products from non-Benelux countries, states a message from The Hague.

The suspensions, which are aimed at preventing price increases, will affect foodstuffs, textiles and footwear and articles essential to economic recovery such as cement, timber, tools and machinery.

* * *

The Czechoslovak Two-Year Plan which will end on December 31, 1948 is to be followed by a Five-Year Plan, for which the Central Planning Commission has already taken up the preparatory work.

Czechoslovakia's foreign trade in November showed a balance in that country's favour of 247,390,000 Czech crowns, but for the period between January and November 1947, there was a deficit of 427,614,000 crowns. Great Britain took first place in supplying goods during November, the Soviet Union being fourth and the U. S. fifth. On the export side, Switzerland was first, with Great Britain second, Russia and the U. S. not being noted among the first five recipients.

Denmark to reduce imports

The Danish Minister of Commerce has announced that Denmark must cut her imports to 20 % below the 1947 level in order to effect a balanced foreign trade. Increased exports were being planned, including butter exports worth 70,000,000 kroner, provided by switching home consumption of butter to margarine.

He also announced the rationing of potato flour at the rate of 250 grams per person each quarter.

For the first time this year Denmark showed a favourable trade balance during November.

Food damage feared in France

Rain has fallen throughout France and the weather has been almost springlike, with a very high temperature considering the time of season. Farmers are anxious owing to the too exuberant growth of the sowings and they fear the effect of later frosts unless snow falls. In Champagne where the soil is chalky and dry, the rain has been very beneficial.

It is feared great damage has been done to crops by the disastrous floods in the East of France, however, it is still too early to give any estimate of loss incurred. Farmers have lost much material and livestock and, no matter how well the crops may fare, cultivators will be greatly handicapped by the flood setback.

America will export 165,000 long tons of cereals to France in February, it is stated (one long ton = 10.16047 qls.). Of the 300 million credit given to France by the United States in the new agreement just signed, it is reported that 111 million will be used for the purchase of cereals.

Price increases have been decided by the French Government for a large number of commodities, including the following:

Butter was increased from frs. 370 to frs. 400 per kilo; sugar from frs. 58 to frs. 63. Fruit pulp, jam, yeast, alcohol, vinegar, brewer's malt, beer, chicory, rum, cocoa, chocolate, coffee and bananas are among the other items increased.

Among commodities on which import duties have been changed are: Coffee, tea, spices, sugar, cocoa, tobacco, vaseline, perfumes, tooth paste, films, gloves, precious metals, automobiles, etc.

Meat freezing in France

Dispatches in the French press indicate that the meat freezing plan will probably not reach the proportions originally intended (30,000 metric tons). At the end of 1947 there were 17,000 m. t. of domestic meat and 11,000 m. t. of imported meat on hand. More imports are awaited. The distribution of the stocks on hand will probably not begin before March 1948 if the winter season continues to be mild.

Maize trade

Imports of maize into Eire during the nine months January-September, 1947, are officially returned at 1,316,739 cwts., which compares with 721,340 cwts., imported in the same period of 1946.

Roumania, it is stated, has agreed to deliver 30,000 metric tons of maize to Czechoslovakia during the month of December 1947 in exchange for Czechoslovakian barley.

Feedingstuffs subsidies in Great Britain

Mr. Strachey, British Minister of Food in a reply made to the House on December 19th, stated: The average cost of the principal imported feedingstuffs on a landed cost basis (including Ministry overheads) for the financial year 1947-48 is estimated as follows, prices per ton:

Maize £23 16s.; Barley £31 7s.; Oats £22 4s.; Wheat offals £18 19s.; Maize products £21 12s.; Oilcakes and meals £39; Rice bran £19 12s.; Locust beans £24. Oilcakes and meals produced at home from imported oilseeds are estimated to cost on the average £22 5s.

Subsidies on these and other minor imported feedingstuffs for the year 1947-48 are estimated to amount to about £26,000,000. In addition, there is a subsidy on home-grown barley used as feedingstuff, estimated to amount to some £3,000,000. There are also subsidies on by-products from the manufacture of human food used as feedingstuffs, mainly wheat by-products, the amount of which is estimated to be in the region of £3,500,000.

Hungarian grain deficit

Budapest advices say that Russia has agreed to postpone until 1948 delivery of 600,000 quintals of Hungarian wheat due as reparations this year.

Hungary's grain deficit amounts to 1,000,000 quintals, part of which will be covered by the postponement, while the remaining 400,000 quintals will be saved by rigid economy plans and various restrictions, the statement says.

Rationing abolished in U.S.S.R.

In U.S.S.R. the rationing system was recently abolished. Previously, only a limited quantity of foodstuffs could be bought on ration tickets, the remainder having to be purchased at higher prices on the free market. Since all foodstuffs are now available at low prices fixed by the State, this reform represents a boost in real value of wages and salaries, especially as the prices of some basic foodstuffs — such as bread, cereals, — have been decreased by 10-12%. The prices of industrial products have been cut to about one-third of what they were before this reform.

At the same time, a currency reform has been undertaken in U.S.S.R. with a view to financial stabilization in the price of the ruble, and eventual free trade under a system of unified prices fixed by the State.

Trade agreements

Representatives of Military Governments for Germany (U. S. / U. K.) met representatives of the Belgo-Luxembourg Economic Union in Berlin between 23rd and 25th October 1947. A draft Protocol on trade was prepared for approval by the respective governmental authorities. The Protocol will take effect as soon as it has been duly signed on behalf of the Government of Belgium and of the Military Governments for Germany (U. S. / U. K.). The agreement is to run to 30th June 1948 and will afterwards be automatically renewed for quarterly periods, unless one month's notice of termination is given beforehand by either nation. With a view to increasing trade between the Belgo-Luxembourg Economic Union and the U. S. / U. K. Occupied Areas of Germany, lists of commodities offering the most promising possibility of trade were agreed upon and are given in Annexes A and B.

Annex A contains the names of commodities likely to be available in the Belgo-Luxembourg Economic Union: from among them, we give the following: medicinal plants, agricultural seeds, seed potatoes, Congo coffee (1,000 tons), beeswax (20 tons), hides, skins and leather, animal hair, auxiliaries for textile and tanning industry (starch base types). *To be investigated*: breeding horses, exchange of horses, exchange of living plants and nursery products, fresh vegetables and fruit, dried chicory roots, herrings, tinned vegetables, timber from Congo, phosphate fertilizers, (superphosphate - 300,000 tons, bicalcic phosphate 25,000 tons, ground basic slag 50,000 tons as $P_2 O_5$), washed and carbonized wool, (3,000 tons), noils and wool waste (5,000 tons), shoddy (2,000 tons), cotton waste and rags - (2,000 tons), scutched flax - (1,000 tons), binder twine.

Annex B contains the names of commodities likely to be available in the combined zones. Among them are the following: hops (1948), salt, agricultural and garden seeds (for exchange), textile machines. *To be investigated*: timber, wool and cotton processing, fabric for glove manufacturing, linings, fabrics for shirts, unbleached cotton fabric, rayon fabrics for ties and umbrellas, Bemberg rayon yarn, combed cotton yarn for threadmaking.

* *

During negotiations held in Helsinki in October 1947 between the delegates of the Belgian-Luxembourg Economic Union and Finland, a supplementary Protocol to the trade agreement of November 6, 1945 was signed, and two lists of the products to be exchanged between the two countries during the quota period ending November 5, 1948, were drawn up.

Finland will mainly export to the Belgian-Luxembourg Economic Union timber and timber prod-

ucts. Finland will export 60 million Belgian francs worth of prefabricated houses and huts; joiner's wood, sawlogs and pitprops, wood charcoal, wood-tar, flour, cardboard and different kinds of paper (printing and writing, for condensers and cigarettes, adhesive, waxed and wrapping paper, napkins, etc.). Part of the consignments are to be sent to the Belgian Congo. Other Finnish exports include raw pelts (10 million Belgian francs) and lichen (200,000 Belgian francs).

Exports from the Belgian-Luxembourg Economic Union will consist chiefly of machinery and apparatuses, metallurgical products, pharmaceutical and chemical products including phosphates (for fertilizers) (60 million Belgian francs), bone precipitated dicalcium phosphate (20 million Belgian francs), synthetic resins (3 million francs), subsidiary chemical products for the textile industry, tanneries, the fur and paper trade, medicinal plants and seeds (1 million fr.), sheepskins, footwear, leather for soles and belts (12 million fr.), worsted (30 million fr.), yarn, cotton thread, hempen twine and cordage, cord for fishing-nets, sewing thread, scutched flax, rayon thread, woollen felt, woollen, cotton and jute fabric, Congo fibres, and Congo arabica coffee.

* *

On December 11, 1947 Czechoslovakia and the U. S. S. R. signed a trade agreement, the most important between the two states to date. The quantity of supplies to be exchanged in 1948, and in the four subsequent years are set out in this agreement. The value of the goods exchanged by each state will amount to 5 milliard crowns (hundred thousand dollars) per annum. Transport facilities between the two countries have been arranged. There will be an increase in heavy industrial products and consumption goods exported to the U. S. S. R.

In 1948, U. S. S. R. will include in the supplies to Czechoslovakia, 400,000 tons of bread grains and 200,000 tons of feedingstuffs (50,000 tons of each kind being delivered before December 31, 1947, and the rest up to April 30, 1948). In the agreement signed on December 11, the quantities agreed upon preliminarily were doubled at the request of the Czechoslovak Government in order to compensate for the poor crop caused through the drought. U. S. S. R. also furnished wool, cotton, furs, fertilizers, naphtha derivatives, asbestos, iron ore and other raw materials required for the Czechoslovak industry.

Czechoslovakia will supply U. S. S. R. with sugar, textiles, footwear, chemical products, pipes for the oil industry, rails, industrial and electric equipment, glass, and other material.

The two countries will exchange specialists, and a liaison officer will take up quarters in each capital. U. S. S. R. will allow Czechoslovakia a cre-

dit of 1,150 million crowns (23 million dollars) repayable in supplies during 1949 and 1950. Exports to U. S. S. R. will represent 16 per cent. of the foreign trade of Czechoslovakia. The cotton imported from U. S. S. R. will cover 25 per cent. of Czechoslovak requirements, and wool imports from 10 to 15 per cent.

* *

A joint Anglo-Soviet communiqué was issued in Moscow the 28th December 1947, giving details of the recent trade agreement.

The main points are:

That the rate of interest on the repayment by the Soviet of the wartime credit has been lowered to half of one per cent. per annum.

The period for repayment of the credit for half the outstanding balances and for all the advances that still have to be made under the agreement is prolonged to 15 years.

The repayment commences at the end of the fourth year in 12 equal yearly parts. The United Kingdom Government, with a few exceptions, waived its claims on the Soviet Government for supplies and services rendered during World War II.

The Soviet Government, on its part, has agreed to make available to the British Government 750,000 tons of coarse grain during the period February to September, 1948, at agreed prices.

The British Government has agreed to facilitate the placing in the United Kingdom by Soviet importing organizations of orders for equipment and mechanization of the timber industry, plywood and timber sawmills and for electro-technical and other equipment.

The United Kingdom Government has agreed to deliver some narrow gauge rails and also to render assistance through appropriate trade channels in the carrying out by Soviet economic organizations of purchases of wool, rubber, aluminium, cocoa beans, coffee and other goods.

Both sides agreed that, not later than May, 1948, representatives of both Governments will meet to agree on an expanded programme of mutual deliveries over a longer period, on the basis of establishing balanced trade between the two countries.

* *

With a view to improving trade relations between the Soviet Occupation Zone in Germany and the Belgo-Luxembourg Economic Union, the Soviet Military Administration in Germany and the Belgian Government, on November 10, 1947, drew up an agreement for the exchange of a certain number of products and merchandise. According to Article 6 of the agreement, the two parties are required to supply the necessary transport means for conveying the goods exchanged. Unless extend-

ed, the agreement will remain in force until all resultant obligations are met.

Included among the goods exported from the Soviet Occupation Zone in Germany to the Belgian-Luxembourg Union are 60,000 cubic metres of pitprops, 5000 cub. m. undressed oak, 1,500 cub. m. sawlogs and agricultural produce (on an exchange basis only). The merchandise which the Belgian-Luxembourg Economic Union will export to the Soviet Zone comprises different machines (to a value of 10 million Belgian francs), semi-worked products and copper alloys, 500 tons wool, 1000 tons wool shoddy, 200 tons scutched flax, 1000 tons natron paper binder twine, 40,000 tons superphosphate, 6,000 tons phosphatic fertilizers, herrings, fish, 200 tons tanner's bark and agricultural produce (on an exchange basis only). The agreement provides for the possibility of both contracting parties exchanging products not mentioned in the two lists. The Belgian and Luxembourg governments have notified the military authorities in the Soviet Occupation Zone in Germany that they desire to export horses, rabbit-skins, leather industry products, Congo timber and wine, and import raw hides, refined potassium nitrate and textile machines with spare parts.

Payments would be made in Belgian francs at the "Garantie- und Kreditbank", Berlin, in the Soviet Zone, and through the intermediary of the National Bank of Belgium, Brussels, in the Belgian-Luxembourg Economic Union.

* *

We publish a list of goods fixed on 28th November 1947 for the trade between the Netherlands and France and the respective Overseas Territories:

French export to the Netherlands and Overseas Territories: Luxury preserves, confectionery, chocolate, fruitpaste, poles of pine wood, raffia and twine, wines and spirits, fruit juices, mangel seed, phosphates, red phosphorus and products derived from it, various chemical products, woollen yarn ready for retail, sheep yarns, various cotton materials, among which Elzas cotton, printed cotton materials made of dyed yarn, fine cotton materials, woollen carpets, pure woollen materials, felt for paper industry, paper for technical industries, cigarette paper (rolls), parchment paper, writing paper and printing paper, agricultural implements, wood veneer.

Netherlands export to France and Overseas Territories: Draught horses, slaughter horses, stallions and mares for breeding, heifers inscribed in herdbooks (partly North Africa), hens' eggs, salted intestines, dried intestines, shrimps, fish scales, tinned fish, consumption potatoes, flax seed for sowing, various seeds of fodder plants, fodder grass, nutmegs, chocolate and confectionery, tea, copra, copra oilcakes, ginger bread, biscuits.

salad dressing and mayonnaise, gin and liqueurs, peeled willow canes, unpeeled willow canes, rattan, carded kapok, various fresh vegetables, beer, tin, sulphuric acid, mineral plants, crude rubber, alcohol, various chemical products, vegetable hormones, woollen yarns for retail, woollen materials, cotton materials, sisal binder twine, chrome leather waste, leather for uppers and soles, material for palm oil factories, agricultural machinery (except material for horse draught), automatic bread ovens.

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An **Italo-Swedish commercial agreement** for 1948 was signed in Rome, January 20, 1948 providing for 280 million Swedish crowns' worth exchange of commodities. Italy will export mostly oranges (12,500 tons), lemons (3000 tons), vegetables (2600 tons), wine and liqueurs (3 million Swedish crowns' worth), salt, silk, woollen and cotton stuffs, rayon and fibres, whereas Sweden will deliver mainly various kinds of cellulose, paper, cast-iron and steel.

* *

A compensation agreement between **Bulgaria and Poland**, providing for an exchange of goods valued at \$ 17,000,000 (U.S. currency) was signed in Sofia on Sept. 1, 1947 and is to be effective for one year. Under the terms of the agreement, Poland is to export to Bulgaria various kinds of electrical, textile and industrial machinery, chemicals, and railway equipment. Bulgaria is to send in return leaf tobacco, skins and furs, ore, lumber, and herbs.

* *

Czechoslovakia and Bulgaria have signed a commercial agreement for 1948 providing exchanges amounting to the value of 300 million crowns. Czechoslovakia will export to Bulgaria glass ware, textiles, ceramics, chemical products, paper and mechanical products. In exchange, Bulgaria will furnish mainly agricultural products, foodstuffs, tobacco and leather.

* *

The Soviet press (on September 2) reported the signing on August 23, 1947, of an agreement between **Bulgaria and the U.S.S.R.** by which the U.S.S.R. is to extend credit to Bulgaria for purchasing industrial equipment including that for a universal fertilizer factory, and electric power station, and a semicoke plant. The U.S.S.R. is to furnish technical aid on plant construction.

The press also reported the signing of a trade and payments agreement providing for an exchange of goods during 1947 and 1948. The U.S.S.R. is to export oil products, metal, raw material for the

textile industry, paper, cellulose, machinery and other goods. Bulgaria is to send in exchange tobacco, and mining and agricultural products.

* *

On November 28, 1947, **Italy and Yugoslavia** signed, in Rome, an agreement for a period of five years and a protocol on the trade exchange between the two countries from November 28, 1947 to November 28, 1948. Two lists appended to the protocol, detailing the goods and products which will be exchanged between the two countries and which will benefit by the most favoured nation treatment.

Exports from Yugoslavia to Italy will include 5000 calves, 300 draught horses, 100,000 head of small livestock, 2000 tons of eggs, 5000 tons of fresh salt-water fish, 1000 tons of pickled salt-water fish, 800 tons of dressed poultry, 150 tons live poultry, prunes and jams (100,000,000 lire), 200 tons killed and live game, 150 tons pickled offals, 200 tons oxhide, 100 tons of lamb, goat and sheepskins and kid, 6000 cub. metres oak, ash and elm sawlogs, 200,000 cub. metres conifer sawlogs, 30,000 cub. metres beech logs, 60,000 steres cellulose beech logs, 180,000 steres firewood, 5000 cub. metres unbarked timber for matches, 20,000 tons woodcharcoal, 100 cub. metres oak veneer, 1000 kg. opium in powder, 2 tons essential oils, 100 tons medicinal plants.

Italy will send Yugoslavia lemons and oranges for a value of 100,000,000 lire, 200 cattle for breeding, 1000 tons cork, 3,000,000 vine grafts (American type), 45,000 metres woollen cloth, 35 tons cotton thread, 2000 tons cotton thread, 1000 tons retted hemp, 50 tons sewing thread, textile equipment (150,000,000 lire), apparatus and instruments for oenology laboratories (10,000,000 lire), 50 tons lactic acid, and other material.

* *

The Ministry of Food announced, on the 22 November 1947 that it has now been agreed between the **British and Danish Governments** that the protocol of July 31st, 1946, which regulated Anglo-Danish trade in eggs, bacon and butter shall be superseded so far as eggs are concerned by a new protocol embodying the following provisions:

(a) The average prices for 1947/48 season and the 1948/49 season shall be increased to 26/- per long hundred.

(b) The quantities for both seasons shall remain at 85 per cent of the total exportable surplus.

(c) The period shall be extended until the 1949/50 season during which year a minimum price of 20/- per long hundred will be guaranteed for a quantity amounting to the average shipments of the preceding two seasons plus 50 per cent.

(d) The quantity of eggs which Denmark may pickle shall be increased to 5000 tons.

(e) The Danish authorities may call for a review during 1948 of prices for 1948/49 season and failing agreement they will send 50 per cent of their exportable surplus at 26/- per long hundred.

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Negotiations resulting in a new **Franco-Danish** commercial agreement were concluded on October 7th. The agreement is to be effective until September 30, 1948. It is reported that French exports to Denmark under the agreement will amount in value to approximately 370 million francs, and will include wine, wool, chemicals, fabrics, trucks, and machinery. France will import from Denmark goods valued at approximately 400 million francs, including lard, condensed milk, butter, cheese, potatoes, meat, fish, horses and machinery.

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On 8th November 1947, a complementary trade agreement was established at Helsinki between **Finland** and **Denmark** which provided an exchange of goods between those countries to the value of 22 million kroner.

Danish deliveries to Finland will include 500 tons of butter, 1000 tons of beef, 700 tons of conserved beef, 150 tons of pork, apples to the value of 2 million kroner, apple mush to the value of 400,000 kr., 5000 tons of sugar and other goods, among which are iron and metal, dyes and lacquers to the value of 4 million kroner.

Finland will deliver, among other goods, 9000 tons of wood, 5000 tons of cellulose, 3000 tons of paper for newspapers, paper for cardboard bags for 1.5 million kroner, real parchment for 80,000 kr., grease-proof paper for 500,000 kr. and other kinds of paper for 600,000 kr.

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On 13th November 1947 a preliminary agreement was established between **Czechoslovakia** and **Iceland** regarding the mutual exchange of goods.

Iceland will provide Czechoslovakia with fish meal, frozen fish fillet and tinned fish; whereas Czechoslovakia will deliver to Iceland: shoes, textiles, window glass and glassware, vehicles, alcohol for consumption, matches, boxes, etc.

In the course of the next two months, discussions will be held in Prague about a new definite agreement.

* * *

A **Sovietic-Finnish** trade agreement was sent to Moscow at the beginning of December 1947 to be ratified. The 1948 volume of barter, we are informed, will be about 50% greater than in 1947.

The agreement will last five years from the date it is ratified. Whereas Finland will mainly export prefabricated houses, wood articles, paper and horses to the U.S.S.R. the Soviet Union will principally supply Finland with cereals.

* * *

A barter agreement between the **Netherlands** and the **French Occupation Zone in Germany** was concluded for the period 1st September 1947 to 31st August 1948. The exports to Holland will comprise textile machinery and machines for the food industry, farm machinery, sewing machines, needles for textile machinery, wood (150,000 cubic meters) chemical and pharmaceutical products. In exchange the Netherlands will send seed and ware potatoes, potato flour, fish and seeds.

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A trade agreement between **Sweden** and **France** was signed for the period 1 November 1947 to 31 October 1948 and for a total amount of 180 million crowns for the imports from Sweden to France, and for 230 million crowns for the imports from France to Sweden. Wood, cellulose, paper, fresh and salted fish, canned fish, chemical products, etc. are among the items exported from Sweden. Wood, cellulose and paper make up about half the volume of the barter. Among the things that France will export are cocoa, fruit, spices, hardwood, wine, spirits, phosphates, pharmaceutical products, needles for textile machinery and articles connected with the clothing trade.

* * *

Sweden is to send to Britain wood products, pulp, paper, iron ore, machinery and fish, under an **Anglo-Swedish** supplementary payments agreement signed in London, states the Swedish Foreign Office in Stockholm. In return Britain will export to Sweden chemical products, skins, hides, textiles, iron and steel, machinery, vehicles, instruments and tools.

The text of the new monetary agreement with Sweden was issued as a White Paper in London November 25th 1947. The Swedish Government has agreed that the import restrictions against the sterling area should be relaxed forthwith except for some categories of luxury goods.

* * *

A trade agreement was concluded at Warsaw, 31 December 1947, between **Italy** and **Poland**, it starts 1 January 1948 and will last a year. Italy will export to Poland 5,000 metric tons of lemons, 1,000 m.t. of oranges, seeds, mustard, hemp, silk, cotton threads, straw, almonds, wine, dried orange flowers, olive oil, lemon peel, Spanish liquorice, tannic acid, raw cork, pharmaceutical products,

textile machinery, etc. Poland will provide Italy with 750,000 m.t. of coal, 10 million eggs, seed and ware potatoes, potato flour, sugar, poultry, charcoal and paper.

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Details have now been released of the agreement signed 20 November 1947 between the Soviet zone and the Bi-zone of Germany.

The Agreement provides for an exchange of goods to a total value of 310 million Reichsmark. The Soviet zone will furnish 20,000 tons of sugar and 10,000 tons of seed potatoes and from the 1948 harvest 140,000 tons of ware potatoes and 20,000 tons of food grains.

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According to the trade agreement which has lately been established between Belgium and Switzerland the following export quotas of Belgian products have been delivered:

Chicory (3,000 tons), grapes, decorative plants, bulbs, cut flowers, seeds (1,000 m.t.), chicory (coffee substitute) (6,500 m.t.), fruit trees (10,000), rose bushes (50,000).

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This agreement which was signed at Brussels on October 13, 1947, is valid from October 1, 1947 to September 30, 1948; it provides for a total exchange of goods to the value of 8-10,000 million Belgian francs. An exchange of goods between Switzerland and the Belgian Congo is included in this agreement by which Switzerland receives from the Belgian Congo, among other things, 2,250 m.t. of bananas and 1,500 m.t. of coffee.

FISHERIES



Report on the fisheries of certain European countries

(Extract from Doc. C 47/26 written by the Division of Fisheries of FAO in Washington in connection with the 3rd. Annual Conference of the Organization).

The following report is based largely on information contained in those Periodic Reports received by FAO as of July 15, 1947, and on statements submitted to the Rome Fish Meeting, June 23-25, 1947. The section on German fisheries is based

on weekly Reports issued by Fisheries Control Board, Food and Agriculture Division, C. C. G. (Control Commission for Germany), Hamburg.

I - Norway

The average annual output of Norwegian fisheries excluding the whale fishery for the ten-year period 1930-39 was some 935,000 tons landed weight. Norwegian production in 1946 is reported to be 835,000 tons and it is estimated that the 1947 output will approach 1.1 million tons. In 1946 exports amounted to 320,000 tons shipped weight while in 1947 it is estimated that exports will reach 420,000 tons. Exports from Norway, prewar, averaged some 410,000 tons annually. A larger proportion of the oil and meal production compared with prewar, is now being retained for domestic use.

The work of reconstruction and further development of the Norwegian fisheries has been hampered by the lack of building materials. The greatest efforts have been directed towards the reconstruction of those areas in the northernmost part of Norway which were rased during the war. Plans have been made for the rationalization and further development of cold storage and refrigeration plants. While reconstruction of the fishing fleet is directed mainly towards the replacement of losses due to war action and normal wear and tear, there is a tendency towards building larger vessels better suited, for deepsea fishing. The Norwegian authorities point out, however, that the future development of the fishing fleet depends on the solution of the question of Norwegian participation in the trawl fishery.

Special fisheries schools are being planned in the most important fishery districts for the training of fishermen. Three such schools have already been erected. A school has also been erected for the training of foremen for fishery plants, and a school for higher fishery education is being planned for the purpose of training teachers for fishery schools and to enable specialization in certain branches of fisheries work.

II - Denmark

Danish fish production increased from 107,000 tons in 1939 to 190,000 tons in 1946. Exports in 1946 amounted to 98,000 tons compared with 63,000 tons in 1939. Fresh fish made up the greater part of the Danish fish exports. Imports which amounted to 16,000 tons in 1939 practically disappeared during the war.

Wartime damages to the Danish fishing fleet have been repaired and some new construction has been undertaken. Operations have been handicapped to some extent by shortages of cotton and yarn and certain deck gear.

III - France

While the French production of some 250,000 tons landed weight in 1946 is considerably less than the prewar average of some 400,000 tons, it shows a marked improvement over the 53,000 tons landed in 1944 and 120,000 tons in 1945. Domestic production together with imports, which reached 50,000 tons in 1946, provided 300,000 tons for consumption in France.

Reconstruction plans call for the construction of 174 vessels by 1950 with a tonnage approximating 65,000 tons. In 1947 five new trawlers were put in service. With the addition of these 174 vessels, the French fishing fleet should reach the efficiency level of prewar.

IV - United Kingdom

Fish landings by the United Kingdom fishing fleets amounted to some 920,000 tons landed weight in 1946 as compared with landings of some 1,070,000 tons in 1938. Imports in 1946 were 292,000 tons and exports and re-exports 51,000 tons.

A large proportion of British steam trawlers were requisitioned for war purposes, of which over 300 were lost through enemy action and other causes. By May 1947, 1,036 steam trawlers were in operation as against a prewar total of 1,740. A number of vessels are undergoing reconversion for fishing purposes and some 36 new trawlers are under construction. 200 small motor fishing vessels are being built mainly for inshore fishing. Reconversion and rebuilding of the fishing fleet have been handicapped by shortages of building materials and manpower and the operation of those vessels available for fishing has been hampered somewhat by lack of manpower and adequate supplies of lines, nets, and trawls. Difficulties have also been experienced in securing sufficient labor for the discharge and handling of fish cargoes. Plans are underway for the development of improved methods of handling fish, particularly the erection of freezing plants for the quick freezing and storing of fish. Improvements have been made in methods of smoking fish and increased supplies of smoked fish are being made available.

V - Belgium

Landings reached 69,690 tons in 1946 compared with 45,600 tons in 1945 and 39,135 tons in 1938. This increase has been accomplished even though the tonnage of the Belgian fishing fleet has not reached prewar levels. Imports in 1946 amounted to 59,950 tons compared with 69,110 tons in 1938 while exports of 7,130 tons in 1946 compared with 10,990 tons in 1938.

The Belgian fleet at the beginning of 1946 consisted of 922 boats with a total tonnage of 38,914 tons while in 1938 there were 1,020 boats with a

tonnage aggregating 56,004 tons. New boats of larger tonnage and greater power are being constructed to enable the delivery of fresh fish from more distant grounds to the home market.

15 percent of the Belgian fishing personnel were lost during the war and one of the immediate problems is the providing of skilled labor, particularly machinists. Belgium has ten fishery schools.

VI - Italy

The Italian Government reports that fish landing in 1946 amounted to some 120,000 tons which is but slightly below the prewar average and compares with 100,000 tons landed in 1945 and 60-70,000 tons in 1944. 30 to 40 percent of the fishing fleet was destroyed during the war but reconstruction has proceeded at a rapid rate and the fleet has now reached, if not exceeded, the size of prewar. In 1939 the fleet consisted of 1,200 motor trawlers, 900 motor boats, and some 30,000 small sail and row boats. In 1947, the fleet consists of 1,400 motor trawlers (150 of which are requisitioned by the Navy), 1,236 motor boats, and some 30,000 small sail and row boats. Output has been restricted by a number of factors including unsuitability of motors for boats in which they have been installed, lack of certain gear and supplies *e. g.* naphtha, prohibition of fishing on the Dalmatian and Albanian coast and that participation in the Atlantic fisheries has not yet been organized.

Complete import figures for 1946 are not yet available but imports of cured fish, largely salted cod and stock fish (dried unsalted cod) amounted to 43,000 tons. This is in line with prewar import of cured fish.

VII - Germany

The total landings in the British and American zones of Germany in 1946 were about 260,000 tons compared with 670,000 tons in 1938 and 620,000 tons in 1937 for all of Germany. Fisheries in the rest of Germany have not been extensive.

The number of German steam trawlers amounted to about 370 vessels in 1938. In 1946 the trawler fleet was reduced to 143 vessels of which at least 85 were small average vessels. Due to the serious lack of gear and supplies, part of the trawling fleet was laid up during 1946. The number of herring luggers was reduced from 170 to 55. The number of cutters exploiting the North Sea Banks remains about the same but the average age has increased with a resultant decrease in efficiency.

Imports of fisheries products in 1946 amounted to about 170,000 tons compared with 200,000 tons in 1936.

Of the total imports 34,000 tons came from the United Kingdom, 113,000 tons from Norway; 7,000 tons from Sweden; 18,000 tons from Denmark and 1,000 tons from the Netherlands.

The composition of the imports of fisheries products was as follows:

Fresh and frozen demersal fish	44,000	tons
Fresh and frozen herring	53,000	»
Salted herring	73,000	»
Canned products	3,000	»

The indigenous production amounted to about 60 percent of the total fish supply in 1946 compared with 75 percent in 1938.

The per capita consumption in 1946 was 10.9 kilograms compared with 12 kilograms for the entire country in 1938, and in a special survey made by the military Fisheries Service, it is stated that fish contributed considerably to the improved supply of protein.

VIII - Switzerland

Fresh water fisheries, which employ directly some 950 persons, produced 2,500 tons in 1945 as against 2,000 tons in 1939. Imports were reduced from 6,500 tons in 1939 to 3,500 tons in 1945. The principal yield is whitefish (Coregones). Subsidies are granted by the Government to encourage pisciculture and promote production.

IX - Hungary

Fish production in 1946/47 is estimated to be 2,000 tons as compared with a prewar output of 6,500 tons. The Government's reconstruction plans call for a production in 1947 equal to 90 percent of prewar, 110 percent of prewar in 1948 and 120 percent in subsequent years.

The fishery problem in Portugal

Fishing has been one of the most flourishing activities in Portugal for centuries. Since the national revolution, however, fishing has entered a new phase of organization and adaptation to technical progress. A decree laying down port regulations was passed in December 1926. In 1927, the government set up the Autonomous Ports Junta with special rules. As soon as public funds were available, operations were undertaken on a large scale for building new ports and restoring the old. By 1947, the government had expended over 650 million escudos on this work. The progress attained as regards fishery in twenty years can be clearly seen by comparing the proceedings of the 1st National Fishery Congress, held in Setúbal at the beginning of 1927, with those of the IInd National Congress, which was held in Lisbon in 1947.

While tackling general problems, such as fishing with the use of ultrasensitive sounding apparatus

and cod-fishing technique, the Congress paid particular attention to the location of the Portuguese fishing ports, river fishing and the various questions linked with an industry which holds a place apart among the economic activities of the country. The social aspect was not neglected and the Congress dealt specially with the education of the toilers of the deep, their technical training, and with problems regarding insurance and welfare work.

The fisherman's situation has improved appreciably in recent years. The fixed wage has increased from 2 to 4 thousand escudos. An equalization fund has been established for the purpose of balancing wages on large and small boats. The insurance of fishermen's effects has risen from 500 to 3,000 escudos. Besides the insurance against injuries, the fisherman is covered by an additional insurance in the case of death, amounting to as much as 10 thousand escudos. A monthly pension is granted to fishermen over 65 years old, and now amounts to four times the original figure. The fishing companies contribute 7 per cent. of the wage, while the crew only pays in one half per cent.

Considerable progress has also been attained in trawling.

As regards sardine-fishing, the first convention is in force, although restricted to one region. A collective agreement covering whaling is being worked out.

To show the importance of the sections which benefit, it should be noted that over 3,000 men are engaged in cod-fishing, over 2,000 in trawling, over 1,500 in whaling and approximately 18,000 in sardine-fishing.

Technical schools have been established in the main fishing centres, along the coast, for the purpose of improving fishing methods; five lower schools five elementary and the vocational school at Pedrouços (Lisbon).

Fifteen establishments have been set up for the instruction of fishermen's daughters in domestic economy. The fishermen also have religious attendance.

After two unsuccessful attempts, welfare work is now being organized for seafaring folk.

Last year 1,939 pensions were paid by the welfare fund to disabled fishermen. There are three fishermen's homes, four day-nurseries and five infant-welfare centres.

The question of inexpensive houses for fishermen has not been neglected, eight districts comprising 336 houses have been set up. Arrangements have been made for another thirteen with 756 houses.

The program approved for the four-year period 1946-46 provides for the establishment of 30 districts comprising 1,649 houses. Funds have already been allocated for five, with 242 houses.

Algerian fishery

The total catch of the Algerian coast sometimes reaches 30 million kg. per year. About 6 million kg. of this amount come from trawling and about 17 million kg. from the sardine, pilchard and anchovy catch. These amounts supply 25 canning factories and 87 salting plants which are along the coast of three Algerian departments. Most of the canning factories have modern equipment. The Algerian Tourist and Economic Office exerts a constant control on the quality of the products. It also watches over the salting plants to protect both the quality of the product and the health of the consumers by approving only those plants which are run under the requisite sanitary conditions.

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According to recent statistics the Italian fishing fleet (motopescherecci) amounts to 32,436 metric tons.

Norwegian cod liver oil report

Advices from Bergen state that on account of the very good output of the seasonal fisheries at Lofoten, the total production of medicinal cod liver oil of this year's Norwegian catch has been important, in spite of the fact that the production from other fishing areas of the country was rather poor. The total production amounts to-day to 115,229 hectolitres.

The development of the market is very much alike to that which prevailed last year. In spite of the fact that the production has been important, it has not been great enough to meet the demand and at present stocks are nearly exhausted.

The seasonal fisheries in Finmarken have just started, but as the plants of that area have not yet been rebuilt after the total destruction during the war, it is not expected that the output will influence the market.

The quantity available for next season will, therefore, depend on the output of the great Lofoten fisheries, which start towards the end of January; and will go on until April.

To-day's quotation, without engagement, for Finest Norwegian non-freezing medicinal cod liver oil, is £ 18 10s. per drum of 25 gallons, c.i.f. London/Newcastle/Hull.

Export of Norwegian whale oil

In view of the anticipated whale oil production which, according to estimates will amount to 150,000 metric tons. Norway has already sold 25,000 m.t. of whale oil to Great Britain and 10,000 m. t. to

Sweden. These transactions do not need the approval of the International Emergency Food Council. According to announcements in the press Great Britain will pay £ 90 per m. t.

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According to the Statistical Bulletin issued by the National Bank of Iceland, exports of various kinds of fish, of cod liver oil, herring oil, herring and fish meal and salted roes, amounted in the period January-October 1947 to 227,315,000 kr. or 92 % of the total value of exports.

Exports of preserved fish from Poland

It was pointed out by the Polish press in December 1947 that the export of preserved fish greatly increased during recent months and that the representatives of the Austrian government signed a contract at Gdynia for the delivery of 500 metric tons of salted fillets of salted whiting. It is probable that another contract will be signed by Austria in May 1948 for 750 m. t. of salted whittings, 500 m. t. of whiting and 100 m. t. of frozen fillets.

FORESTRY



The first meeting of the Timber Subcommittee of the Economic Commission for Europe

The F. A. O., under its Charter, has definite responsibilities in the field of forestry and forest products. The report of the second annual conference of F. A. O. held in Copenhagen in 1946 included a recommendation for a special conference to assess the European timber situation. This proposal was endorsed by the Preparation Commission on World Food proposals at its Washington meeting in January 1947. As a result the Marianske Lazne International Timber Conference was convened in April 1947. One of its main recommendations was that the work of the Economic Commission

for Europe, then being organized, should be coordinated with F. A. O.'s efforts to solve the outstanding problem of European timber shortages.

E. C. E. on its part recognizing the importance of timber as a key item in European recovery and the urgent problems resulting from current shortages, decided to set up a Timber Sub-Committee attached to its main Committee on Industry and Materials. An important innovation was made in extending representation from that established under the E. E. C. E. subcommittee to include exporting as well as importing countries.

Negotiations for cooperation between the Timber Subcommittee and F. A. O. continued throughout summer. When the Marianske Lazne report was considered at the third F. A. O. conference in Geneva 1947 an arrangement was proposed whereby F. A. O. would establish a European regional forestry office at Geneva which, *inter alia*, would assume responsibility for the secretariat of the E. C. E. Timber Subcommittee. This was approved and the Chief of the Forest Products Branch of the Forestry Division of F. A. O. remained in Geneva after the F. A. O. Conference to organize this cooperative effort and to make necessary preparations for the first meeting of the Timber Subcommittee to be held in October 1947. These preparations included the compilation of work sheets covering the past, present and future production of sawn softwood, consumption figures for various countries, and import and export requirements for softwood and pitprops.

The Timber Subcommittee convened on October 15, 1947 with 47 representatives from 22 countries and four specialized agencies. The Subcommittee reviewed the softwood lumber production programmes 1948 to 1955 for all European countries and completed a table indicating maximum output considered possible by each country, provided it could secure special requirements of equipment, coal, food, etc. and the necessary manpower.

Review of the consumption figures gave rise to some concern in the Subcommittee because of the substantial reductions indicated for importing countries despite their reconstruction needs. The Executive Secretary was requested to organize a consumption study to be undertaken by a small group of experts drawn from both importing and exporting countries. They would be expected to investigate possible economies in use of timber, waste reduction, and greater use of substitute materials.

Information made available by the Secretariat supplemented by data given by delegates led the Subcommittee to the conclusion that for 1948 there would be a deficit of 2.1 million standards below European softwood requirements. This represented about 45 per cent of total import needs. In preparing this estimate due allowance had to be made for servicing essential needs of overseas

countries which historically have received supplies from European exporters. However, the satisfaction of requirements for additional production referred to above would decrease this deficit to about 1.6 million standards in 1948 and 1949 and 1.7 million standards in 1950.

The Subcommittee felt that it would be premature at its first meeting to attempt an allocation of available softwood supplies for 1948. In the first place there was no guarantee of availability of additional requirements for increased production. Further it was hoped that four exporting countries of Eastern Europe, whose pre-war capacity amounted to 1 ½ to 2 million standards, would decide to take a more active part in the next meeting. These countries represented a source of supply which, if available to any important degree, would go far towards eliminating the deficit.

Furthermore, currency problems were known to be interfering in increasing degree both with inter-European timber trade and with purchases from North America. Dollar shortages were in fact forcing several countries to make drastic curtailments in purchasing programmes for 1948.

In the light of this situation the Subcommittee decided to ask the Executive Secretary to present requirements of producing countries to the proper authorities, to establish contacts with Eastern European countries which were potential exporters, and to bring currency troubles to the attention of the appropriate international agencies.

The Executive Secretary on his part advanced suggestions to the Subcommittee to the effect that exporters be asked to maintain production and minimize prices and currency demands, and that importers be urged to set maximum price and currency offers as soon as possible. The delegates agreed to refer these suggestions to Member governments and asked the Executive Secretary to submit proposals for suitable procedure at the next meeting.

Pending specific allocation arrangements the Subcommittee made certain interim recommendations to governments. These included restraint in buying on 1948 account by favourably situated importers, facilitation by exporters of purchases to importing countries faced with currency difficulties and maintenance of production by exporters. The Subcommittee also urged Member governments to report to each other through a secretariat the statistical programme which it approved. The Subcommittee stressed the intention of ensuring that any special requirements for increased production made available should be directly proportioned to increased export supplies or reduced imports.

The Subcommittee released importing countries from the voluntary limitations on purchases agreed for 1947 in view of the inability of many countries

to take up their quotas because of currency difficulties.

Agreement was reached in the Subcommittee with respect to action on pitprops. As heretofore, allocation of supplies will be dealt with by the Coal Committee of E. C. E. set up to succeed the Emergency Coal Organization. The Timber Subcommittee will advise with respect to pitprop supplies and make sure that requirements are met. In view of the importance of increased coal production highest priorities will be given to pitprops in production and export agreements.

Before closing its session the Timber Subcommittee expressed its satisfaction with the liaison established between E. C. E. and F. A. O. whereby the latter agrees to assume responsibility for the secretariat of the Timber Subcommittee.

From the above account it will be seen that the Timber Subcommittee has entered into its tasks with care and competence. The existence of an organization of this kind, comprised of experts from both exporting and importing countries, whose recommendations and decisions inevitably must carry weight with Member governments, ensures that fair and equitable solutions to European timber problems will be reached. The European cooperation of the 1930's in timber matters is resumed, broadened and placed on a much more satisfactory basis.

(Sent by D. CAMERON, Chief of FAO Forestry Office, Geneva).

VITICULTURE



Wine production

In October 1947 forecasts of the wine production in Algeria, published in the OFALAC Bulletin, were as follows:

Algiers	3,267,000	hectolitres
Oran	4,600,000	"
Constantine	946,000	"
<hr/>		
Total	8,813,000	"

namely, an average of 26 hl. per hectare in bearing. Other estimates give a higher figure = 9,500,000 hectolitres.

The quality is expected to be good, between 11 and 12°.

At the XXVIth meeting of the Committee of the International Wine Office, a brief report on viticulture in Germany was presented, from which the following facts have been taken. Vineyards at present cover approximately 62,000 ha. and are in fairly good condition despite the shortage of fertilizers, particularly phosphates, which reduces yields. Phylloxera which had invaded 10 per cent. of the total area, is spreading, and is causing, to a small extent everywhere, appreciable losses in harvests and necessitating uprooting of the diseased vines, made compulsory by very strict laws. Vineyards are being renewed according to more up to date methods and consequently progress is being attained in wine-growing. In some regions where the climatic conditions are less favourable, the vine is no longer cultivated. Production which amounted to 4.5 million hectolitres in the best years between the two wars, has fallen to under 2 millions since 1939.

German wine has always been consumed practically exclusively inside the country. Exports were trifling and of no economic importance.

The only by-product is alcohol obtained by distillation of the lees, which was consumed locally. Gallized wines are made from the marc.

One of the most difficult problems in German wine-growing is renewing the varieties. Various attempts at propagating stocks in Germany having been unsuccessful, vine-growers had to turn to other countries for their requirements. At present German nurseries can supply 2 to 2.5 million stocks; an additional 6 million will have to be obtained from abroad. The varieties grown are Kober 5 BB (Riparia × Berlandieri) for calcareous soils (95 per cent.) and 33.09 (Berlandieri × Rupertis), 5 per cent. Buying contracts have been concluded with French and Italian nurserymen, and, to a smaller extent, with Viennese, Yugoslav and Rumanian producers.

As regards parasiticides, 5 to 7 thousand tons of Bordeaux mixture and 3 to 5 thousand tons of sulphur are used every year in Germany.

Belgian grapes grown under glass will be available in Britain again, as the ban on their importation was lifted on October 3rd, 1947.

According to information received by the International Wine Office, the Yugoslav Government has started following the system employed in the USSR

namely, planned programs and the industrialization of the country.

The first five-year program provides for an increase in vineyards from 223,000 hectares (1939) to 235,000 in 1951. Grape production, therefore, will rise from 7,256,500 qls. in 1939 to 10,200,000 qls. in 1951, and wine from 4,121,000 hectolitres in 1939 to 5,200,000 in 1951.

PLANT DISEASES AND INSECT PESTS



Locusts in
France

The *Comptes rendus hebdomadaires des Séances de l'Académie des Sciences*, Paris, n° 20 (November 17, 1947), publishes a report by Mr. Emile Roubaud on the locust problem in France. The unexpected outbreak of swarming of the migratory locust (*L. migratoria* L.) in the Gironde area is engaging the attention of both biologists and agricultural experts. Such a redoubtable change in the behaviour of an insect, long considered in the south west of France as being incapable of destructive invasion, raises problems important both theoretically and practically. The author wonders if the phenomenon is due entirely to favourable conditions brought about by forest fires and the regional climatic conditions of recent years or if locusts from another swarm of migratory locusts have been introduced into the Landes area.

According to the investigations of Mr. Roubaud, in French territory, there are at least two genetically distinct biotypes of *L. migratoria*, which can be distinguished by their system of development. The migratory locust of the Gironde or Landes region, which has now started swarming, represents a biotype with only one annual generation. This is the type usually found in Europe. In the south of France, however, there is another type of *L. migratoria*, or Mediterranean locust, which, with a favourable temperature, produces several generations without a break, as is the case generally with the sub-species *migratorioides* in the hot zones of Africa and Asia. The author, with some locusts he had

captured, obtained six generations without interruption. He noted that when bred collectively, these locusts reacted in the *gregaria* sense, by giving forms comparable to the *Locusta* of Algeria under the same conditions, or to the *Locusta gregaria* he had observed in Italy. The Gironde locust, at present showing migratory activity, cannot biologically and genotypically be assimilated with the preceding. It also differs morphologically from the *L. migratoria migratoria* L. in south east Russia, of which specimens have sometimes been seen in France. It seems that it is a French independent sub-species, although no experimental data on its behaviour prior to 1945 are available.

Have outside locusts caused this present quickening of activity? To reply to this query, first of all the possibilities of interbreeding among the different European biotypes would have to be ascertained. In particular, the effect of a possible hybridization between the Gironde migratory locusts, of which advance groups have already penetrated into various parts of the French Mediterranean coast, and specimens of the local breed would have to be evaluated experimentally.

It is to be feared that hybridization introduces into this non-swarming endemic population a dangerous metabolic reactivity, unless the effects of heterosis are not attenuated by a more or less marked amxy.

In a note by Mr. Georges Remaudière (*Comptes rendus de l'Académie des Sciences*, No. 21, November 24, 1947), the Landes locusts are described from the biometric and somatometric standpoint. The author concludes that these locusts are a special subspecies and suggests calling them *Locusta migratoria gallica* subsp. nov. The new subspecies differs from *Locusta migratoria* L. in being much smaller in size. The insects are to be found in the *solitaria* phase in the sunny parts of the forest zone of the Gascony Landes. Locusts in the *gregaria* phase, which appeared in these regions in 1945, migrated in 1946 and 1947 within a radius of nearly 500 km., and scattered up to the southern coast of England and the French coast on the Mediterranean. Lastly, *Locusta migratoria gallica* is characterized by having only one generation a year, both for the *gregaria* and for the *solitaria* phase.

The Colorado beetle in French-speaking Switzerland during 1947

(A statement from the Federal Experiment and Seed-testing Station, Mont Calme, Lausanne, December 1947).

Hibernation conditions for the Colorado beetle in the autumn of 1946 were favourable and the great number of perfect insects which burrowed into

the ground foreshadowed a sizeable invasion in 1947. Besides, as the beetle is acclimated, it is practically immaterial whether certain seasonal winds bring new swarms of perfect insects from the west. The headway made in our area by the Colorado beetle can no longer be attributed to such accidental causes as their being brought on the wind. Furthermore the East wind has prevailed for several years and no important swarms were brought to our notice in 1947.

NATURAL HIBERNATION CONDITIONS IN OCTOBER AND NOVEMBER 1946 were characterized by normal temperatures, comparatively little rain and too much sunshine. Burrowing was therefore an easy task for the beetles. DECEMBER 1946, JANUARY and FEBRUARY 1947 were cold months; the minimum temperatures recorded at Lausanne were -8.2°C ., -12.4°C . and -7.4°C . respectively.

MARCH, on the contrary, was warm, overcast and rainy whereas APRIL was warm, dry and sunny.

The Colorado beetle did not appear in APRIL as it had the previous year. The question arises whether this delay in the appearance of the parasite is due to the unusually hard winter and the greater coldness of the ground.

MAY was warm, dry and cloudy; the maximum temperature of 29.6°C . was recorded on 29 May, there was little rain. There were 9 hot days during this month, the temperature rose above 20°C . between 12 and 16 May.

The beetles made their first appearance 7 May, a month later than in the previous year. They began to lay immediately and single flights were noticed as early as 17 May. The hatching of the first eggs laid had a set-back after this date on account of the fall in temperature and large numbers of beetles were not seen on level ground until the end of the month. The first larvae made their appearance also at this time. Treatment was prescribed and the dates selected for its application were the first fortnight of June on the plains and about two weeks later at higher altitudes. Though there was no swarm it could be foreseen at this time that the invasion of the parasites would be much heavier than in 1946.

The month of JUNE was warm, with a maximum temperature of 33.6°C . at Lausanne on the 28th. Rainfall and winds were comparatively normal and no strong West winds were recorded. The invasion spread over the whole of French-speaking Switzerland except for a few mountainous areas during this month. Fortunately the weather was favourable for carrying out the treatments properly and they were on the whole efficient-

ly done. Some neglect, however, unfortunately occurred and to it may be attributed the great number of beetles which formed the summer generation. A second treatment, to be applied at the beginning of July on the plains, should have already been foreseen in June.

The first twenty days of JULY were stormy and then a series of particularly hot days followed. It rained quite a good deal in the first fortnight of July; the rainfall for the month was 110 mm. whereas the average is 100 mm. There were some local winds but these had not much influence on the formation of swarms.

The July situation would have been disastrous had the invasion not been checked in June by the careful application, in most cases, of the treatment at the right time. There were few perfect insects of the summer generation except where there were some early crops which had been neglected and were ripening. When the adult beetles found no more food in the fields they undertook a mass emigration either to late plantings, still in leaf, or to plants of the Solanaceae family.

AUGUST was very hot and dry, the rainfall was only 31.3 mm., 28 per cent. of the normal amount. The weather was extremely calm with predominantly East winds. The summer generation of beetles continued to appear during this month. It was found that many eggs had been laid on late varieties of potatoes and the number of larvae soon increased. A new treatment for the late season was prescribed. Results were excellent where this new treatment was applied and the new invasion wave was checked. In those areas favourable to it the summer generation was able to develop perfectly on late potatoes when the treatment was not applied and this constitutes a great menace for 1948. Although no big swarms were seen during the month of August large migrations of beetles were observed leaving areas where the crop was either ripe or withering. These perfect insects were found everywhere in search of cooler spots, or ground where they could burrow earlier than usual. Some were even found in the suburbs, in flats, and in cellars that were comparatively cool.

SEPTEMBER was still warm and dry but the nights were already getting cold. It rained seldom, only 34.3 mm. fell which is a third of the normal amount, and there was little wind. Beetles in all stages were found during this month and, on account of the drought migration continued as in August.

Conditions in the autumn of 1947 were, therefore, extremely favourable to the beetles which had no difficulty in settling into winter quarters. The protracted spell of good weather allowed the larvae

of the summer generation to develop and complete their metamorphosis before the winter.

Forecasts for 1948

All signs point to a 1948 invasion at least as large as the one this year. A balance appears to have been reached between the increase of the parasites on the one hand, and control methods on the other. If this balance is upset by neglecting to carry out the treatments then the damage wrought by the Colorado beetle will surely increase.

Damage

Thanks to the overall measures taken to control this parasite it may be said that this year again no great damage, on the whole, has been wrought by the Colorado beetle. A let-up in the application of the treatments would, however, suffice to create a disastrous situation.

The minimum requirements for potato production in French-speaking Switzerland are one treatment with insecticide for early varieties and 2-3 treatments for late varieties.

Control

The systematic gathering of the beetles has given excellent results in those mountainous areas where the invasion is only sporadic. Arsenical compounds and DDT are both used for treatment in invaded areas; the arsenical compounds are both effective and cheap, DDT has the advantage of attacking the perfect insects and of remaining effective for a longer period. In 1947 it did not appear necessary, as in former years, to increase the strength of the arsenical sprays. On the other hand it is a pity that in a great many cases those persons who administer the treatments neglect to apply sufficient quantities to the borders of lots and so allow foci to remain which ensure the survival of the parasite.

Occurrence of the Colorado beetle

The conclusions reached in the 1946 report are still applicable this year. The Colorado beetle has been found everywhere in French-speaking Switzerland except for a few townships in the Valais. The density of the parasite varies with the locality, at high altitudes there are relatively few compared with the number on the plains. It appears peculiarly difficult for the Colorado beetle to hibernate above a certain altitude but there are, however, a sufficient number of established foci to ensure the survival of the parasite.

RURAL WELFARE



Land
improvement
in Italy

In Italy, 25 milliard lire have recently been allocated for public reclamation projects and private land improvement work, indicating renewed interest in this field.

This amount is apportioned as follows:

12 milliard 700 million lire for public hydraulic and forestry projects in the mountain catchment areas;

3 milliard 300 million lire for reconstruction work and repairing of war damage in reclamation zones;

8 milliard for subsidies granted in the case of private work undertaken in reclamation or other zones, according to Art. 1 of the Decree of July, 1, 1946 regarding measures for combating unemployment and for promoting the effective recovery of farm production.

1 milliard lire for contributions for the aforesaid purposes.

This sum of 25 milliard, for public and private projects, has been divided among the different agricultural regions according to priority of requirements and extent of war damage.

All regions have been allocated a sum in proportion to private efforts and to losses suffered through the war.

A little over 8 per cent. of the amount assigned has been reserved for improvement of mountain pastures.

Cooperative stores in U. S. S. R.

Early information available on the application of the Decree of November 9, 1946 regarding the development of cooperative trade in foodstuffs and industrial products in the towns and workers' settlements, and the intensification of the production of foodstuffs and current commodities by cooperative enterprises, testifies to the expansion in cooperative trade since the passing of the decree, but also shows some of the difficulties encountered.

From November 1946 to May 1947, the cooperative organizations purchased, to the amount of 3,192 million rubles, agricultural produce for sale in the towns and workers' settlements, offering the town dwellers foodstuffs at prices much below those charged on the markets or in the government stores. Thus, in May, meat was sold 40 per cent. cheaper in the stores of the Moscow Cooperative Union, than on the markets of the collective farms, animal fat 10 per cent., milk 15 per cent., onions 20 per cent. lower. This was also the case in Leningrad, Karkhov and other towns. Some cooperative stores, however, still buy most of their stock in the regional centres and in the stores of the collective markets, instead of obtaining it inland, which in many instances, has caused prices to rise. The storage and transport of the produce would benefit by more up to date methods.

Cooperative trade is beginning to play an important part in many towns. In the sale of meat, the cooperative stores sold the following percentages of the total amount supplied to consumers: 21 per cent. in Moscow, 18 in Leningrad, 14 in Kuibyshev, 25 in Rostov on the Don.

The turnover of the urban cooperatives in the retail trade rose from 843 million rubles in November-December 1946 to 3,277 million during the first six months of 1947. The stores opened in the towns and workers' settlements number 17,660. In many industrial towns, however, the cooperative network has still to be organized or requires to be extended. In effect, of the 95 towns and workers' settlements in the Donetz coal-basin, 47 are without cooperative stores; 6 out of the 11 main towns in the Kusnetsk coal area are in the same position. There have been serious deficiencies in organizing the production of current commodities, and inadequate use, by the managers, of the local raw materials.

The local Soviet organizations are beginning to take an interest in cooperatives and, at their meetings, discuss the problem of cooperative trade. A considerable number of the officials belonging to the Soviets and the party have been instructed to work in the cooperative enterprises. ("Informations coopératives", published by the International Labour Office, Geneva).

* *

In December 1947 the British Government granted licences for the import of Italian cauliflowers for the period 1 December 1947 to 28 February 1948. 25 per cent. of the quantity imported in 1946 will be allowed at the rate of £ 23 per metric ton for cauliflowers sent by sea, with the usual allowance for wastage, and £ 57 per metric ton for those sent overland. The agreement specifies that not more than a third of the total amount may be imported during February.

* *

On the citrus plantations on the Black Sea coast of Georgia tangerines, oranges and lemons are being harvested. This year a record crop will be reached of more than 600 million citrus fruits. In 1926 a total of only 15 million fruits was harvested in Georgia.

FAO ACTIVITIES



Portuguese National FAO Committee

The Portuguese National FAO Committee was constituted 29 November 1947. It is composed of the following members:

Chairman — Prof. Antonio DE SOUSA DA CAMARA.

Vice-Chairman — Representative of the corporate organization.

Secretary — Dr. Henrique MIRANDA MARTINS DE CARVALHO.

Technical secretary — Dr. José CONÇALO DA CUNHA SOTTOMAYOR CORREIA DE OLIVEIRA.

Agricultural expert — Prof. Ing. D. Francisco DE ALMEIDA DE VILJHENA (COUNT OF ALPEDRINHA).

Forestry expert — Forestry engineer José ALVES.

Fisheries expert — Dr. Alfredo SOBRAL MENDES DE MAGALHAES RAMALHO.

Animal husbandry expert — Dr. Aldovino PEREIRA LUCAS.

Colonial expert — Dr. Traciano TARROSO.

Scientific agricultural research expert — Ing. D. Rodrigo DE CASTRO (Nova Goa).

Statistical services expert — Ing. agr. Augusto VASCO MERA PINTO DE MAGALHAES.

Corporate organization expert — Dr. Alexandre CARLOS DE MAGALHAES DE ALMEIDA FERNANDES.

Deputy Director General of FAO

Mr. Noble CLARK, Associate Director of the Agricultural Experiment Station, University of Wisconsin, has been appointed Deputy Director General of FAO for a period of five months beginning as of 13 January 1948. The proposal was made by Sir John Boyd Orr and unanimously approved by the Council of FAO. In 1947, Mr. Noble Clark acted

as Chairman of the FAO mission for Poland on which he wrote an important report during his stay in Rome at the FAO Temporary Bureau in Europe.

FAO course on food preservation

FAO plans to hold a course on the handling of frozen food, on the lines of the schools which were held at the initiative of FAO last summer at Bergamo, Milan and Weybridge. The main subjects to be treated are the conservation of food by means of refrigeration; freezing and cooling of food; packaging etc.

FAO is now investigating which country will adapt itself best to this school as technical facilities such as laboratories, and freezing plants must be taken into account. Both Czechoslovakia and Belgium have offered to have the school, and this proposal is generally arousing great interest.

Hybrid seed and maize for Europe

The United Nations Food and Agriculture Organization will send 28 bushels of hybrid maize seed to agricultural experiment stations in Austria, Czechoslovakia, Hungary, Italy, Poland and Yugoslavia in time for spring planting in 1948.

This action by the Organization follows up work begun at the Hybrid Maize Demonstration School in Bergamo, Italy, last August.

These arrangements will enable maize breeders to profit from years of research in the development of hybrids in the United States, where the use of such seeds has increased yields by more than 20 per cent. the statement says.

AGRICULTURAL NATIONAL PUBLICATIONS



Below we publish a selection of the agricultural Danish, French, Italian and Portuguese periodicals. We trust these will be of interest to our readers.

DENMARK

Landbrugsraadets Meddelelser — (News of the Agricultural Council) (Published by the Deputation of the Danish Agriculture Organizations, Axelborg, Copenhagen).

Dansk Landbrug — (Danish Agriculture). (Published by the Danish Farmer Associations, Copenhagen).

Tolcmændsbladet — (Landowners' Journal). (Published by the Union of Danish Landowners, Axelborg, Copenhagen).

FRANCE

Revue du Ministère de l'Agriculture — Review of the Ministry of Agriculture (published weekly by the Ministry).

Editorial offices: Research and Documentation Service of the Ministry of Agriculture, 78, Rue de Varennes, Paris VIIIème.

Subscription fees: six months 250 fr., one year 500 fr.

Statistiques agricoles annuelles — Annual agricultural statistics (published by the Ministry of Agriculture).

Editorial offices: Research and Documentation Service of the Ministry of Agriculture, 78, Rue de Varennes, Paris VIIIème.

Evolution hebdomadaire de la situation économique — Weekly developments in the economic situation (published by the Institut National de Statistique et des Etudes Economiques). 16 Rue de Monceau, Paris VIIIème.

Subscription fees: six months 1,050 fr., one year 2,000 fr.

Etudes et Conjoncture: A serie rouge (Union française). B serie bleue (Economie mondiale).

Studies and Circumstance - A: red series (the French union). B: blue series (World economy).

Address: l'Institut National de Statistique et des Etudes Economiques 11 Bd. Hausmann, Paris IXème

Subscription fees: A red series: 1200 fr., outside France: 1500 fr. B blue series: 1500 fr., outside France 1800 fr. For both series: France and colonies: 2,300 fr. Foreign countries: 3,000 fr.

Bulletin de la Statistique Générale de la France — French General Statistics Bulletin.

Address: Institut National de la Statistique et des Etudes Economiques, 11 Bd. Hausmann, Paris IXème.

Subscription fees: 700 fr. Outside France: 850 fr.

Bulletin mensuel de la situation économique — (Monthly bulletin on the economic situation published by the Centre National d'Information Economique).

Revue du Travail —

Address: Ministère du Travail et de la Sécurité sociale, Centre d'Etudes et de Statistiques, 127, rue de Grenelle, Paris VIIIème.

Subscription fees: six months: 360 fr. one year: 700 fr.

Bulletin mensuel de statistiques coloniales — Monthly bulletin of colonial statistics.

address : Ministère de la France d'outre-mer, 27 Rue Oudinot, Paris.

Subscription fees : 300 fr. Outside France : 500 fr. with supplements : 750 fr. Outside France : 1,250 fr.

Population — Population.

address : Institut National d'Etudes Démographiques 108, Bd. Saint-Germain, Paris VIème.

Subscription fees: 300 fr. Outside France: 375 fr.

ITALY

L'Italia Agricola.

Agricultural Italy, a monthly review, Ramo editoriale degli agricoltori, Via Quattro Fontane - Rome.

Rivista di economia agraria.

Review of agrarian economics, Istituto nazionale di economia agraria, Via G. Amendola, 36 - Rome.

L'Acqua nell'agricoltura, nell'igiene e nell'industria.

Water in agriculture, sanitation and industry - a monthly review of the Italian hydraulic association, Piazza San Bernardo, 101 - Rome.

La Canapa.

Hemp, a monthly review. Via San Martino della Battaglia, 6 - Rome.

Il Latte

Milk, an illustrated monthly review, Via Ampère 26 - Rome.

L'Ortofrutticoltura

Fruit and vegetable growing - a monthly review Via G. Amendola, 86 - Rome.

Il tabacco.

Tobacco, a monthly review. Via Nazionale, 66 - Rome.

L'Italia vinicola e agraria.

Wine-producing and agrarian Italy, a fortnightly review of oenology - Casalmonteferrato.

La caccia.

Hunting, a monthly review. Via Milano 70 - Rome.

Terra e sole.

Earth and sun, a review of practical agriculture. Galleria Sciarra - Rome.

Il legno.

Wood, a monthly review. Via Amadei, 8 - Milan.

Humus.

Humus, a monthly review of agrarian economics. AETAS - Milan.

Rivista di stima e genio rurale.

Valuation and rural engineering, a monthly review. Via Filippo Re, 8 - Bologna.

Giornale di agricoltura della domenica.

The Sunday agricultural paper. Ramo editoriale degli agricoltori. Via Quattro Fontane - Rome.

Alimenti e bevande d'Italia.

Italian food and drinks, a monthly review. Via Torino, 153 - Rome.

Leggi e decreti d'interesse agrario.

Laws and decrees bearing on agriculture, a periodical edited by the Ramo editoriale degli agricoltori, Via Quattro Fontane - Rome.

Rassegna quindicinale dell'agricoltura.

A fortnightly review of agriculture, edited by the Banca Nazionale dell'Agricoltura. Corso Umberto, 287 - Rome.

La pesca italiana.

Italian fishing, a monthly review. Via Firenze, 47 - Rome.

L'Italia e i cereali.

Italy and cereals, a monthly review. Via della Scrofa, 64 - Rome.

Rassegna dell'Agricoltura italiana.

A review of Italian agriculture, a monthly review. Via G. Amendola, 86 - Rome.

PORTUGAL

Anais do Instituto do Vinho do Porto (*Annals of the Oporto Wine Institute*).

Boletim da Casa do Douro (*Douro House Bulletin*), published monthly.

Boletim da Federação dos Vinicultores do Dão (*Bulletin of the Dão Winegrowers' Federation*), published irregularly.

Frutas da Madeira (*Madeira Fruit*). Monthly publication of scientific and popular agricultural information. Property of the Association of Exporters of Madeira Fruit and Produce.

Boletim da Junta Nacional das Frutas (*Bulletin of the National Fruit Board*) and *Serviço informativo* (*Information Service*) of the same Board (supplement to the bulletin).

Boletim da Junta Nacional da Cortiça (*Bulletin of the National Cork Board*).

Boletim da Junta Nacional do Azeite (*Bulletin of the National Oil Board*).

Boletim de Informação e Publicidade da Junta dos Lacticínios da Madeira (*Information and Publicity Bulletin of the Madeira Dairy Produce Board*).

Boletim Pecuário (*Bulletin of Animal Husbandry*). Published quarterly under the auspices of the General Direction of Animal Husbandry Services.

Boletim da Direcção Geral da Industria (*Bulletin of the General Direction of Industry*).

Boletim da Pesca (*Bulletin of Fisheries*). Property of the Associations of owners of trawlers and boats engaged in cod and sardine fishing. Published monthly.

Cadernos mensais de Estatística e Informaçoes do Instituto do Vinho do Porto (*Monthly Statistical and Information Notes of the Oporto Wine Institute*).

Estatísticas Agrícolas do Instituto Nacional de Estatística (Farm Statistics of the National Institute of Statistics).

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A short and concise pamphlet on the aims, work and structure of the **Economic Commission for Europe** in Geneva, has been published by the Department of Public Information, the United Nations, Lake Success. The foreword was written by Mr. Gunnar Myrdal, Executive Secretary of the Economic Commission for Europe.

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The recently established Institute in Prague for International Collaboration in Agriculture and Forestry has published the first issue of its Bulletin 'Interagra'. Its purpose — as stated by Mr. Julius Duriš, Minister of Agriculture — is to further co-operation among nations in research, planning and progress in agriculture and forestry. The articles in the first issue are written in Czech, Bulgarian, English, French, Polish and Russian.

LEGISLATIVE NEWS

SUMMARY: I. NUTRITION: (a) Cereals, flour, bread (Belgium, Finland, France, Poland, United Kingdom); (b) Meat and fish (Belgium, Poland, United Kingdom); (c) Milk and cheese, eggs (Finland, Ireland, United Kingdom); (d) Potatoes (United Kingdom); (e) Sugar (France, United Kingdom); (f) Olive oil (Italy, Portugal); (g) Vegetables and fruits (United Kingdom); (h) Coffee, tea (United Kingdom); (i) Alcoholic beverages (France); (j) Feeds for livestock (United Kingdom). — II. AGRICULTURE: (a) The organization of agriculture (Austria, Poland, United Kingdom); (b) Assistance to farmers (Italy); (c) Land reclamation (Finland, Italy); (d) Crop regulations (France); (e) Stock-breeding (Belgium); (f) Diseases of livestock (Belgium); (g) Measures affecting landed property (Netherlands). — III. ECONOMIC AFFAIRS: (a) Price control (United Kingdom); (b) Control of foreign and home trade in general (Belgium, Czechoslovakia, Ireland, Italy, Portugal, Switzerland, the Belgian-Luxembourg Union, Switzerland and Liechtenstein Principality); (c) The wool trade (Ireland, Italy, United Kingdom). — IV. FISHERIES. — V. RURAL WELFARE: (a) Social insurance (Italy, Switzerland); (b) Rural electrification (France).

I. - NUTRITION

(a) Cereals, flour, bread.

BELGIUM

The Ministerial Decree of December 15, 1947 (*M. B.*, No. 359, December 25, 1947, p. 11933) refers to milling of customers' own grain. The exercise of this business must be approved by the Minister of Agriculture. Approval will only be given when the business is carried on in healthy, clean, well-ventilated premises, provided with the machinery and installations listed in the Decree.

FINLAND

In Finland, a resolution passed by the Council of Ministers, No. 844, of November 21, 1947 (*F. F.* No. 843-847, November 29, 1947, p. 1322) contains new prescriptions for a further regulation of the compulsory delivery of cereals, their by-products, and bread. It prescribes that all stocks of cereals, their by-products, and bread, existing at midnight of November 20, 1947 in the mills or annexed warehouses carrying on trade in such products or in bakeries, biscuit factories, etc. must be ceded to the Government and it fixes the prices at which they are to be given.

For the purposes of this delivery, any quantities of the said products in transit for delivery to a purchaser must be considered as belonging to the latter.

FRANCE

A Decree of October 1, 1947 (*J. O.*, No. 238, October 9, 1947, p. 10061) fixes the rate of the bonus for encouraging the cultivation of wheat and rye set up by Act No. 47-1326 of July 18, 1947; for the 1947 harvest it will be 1000 fr. per hectare for wheat or rye actually sown and harvested.

Producers who wish to obtain the bonus are required to sign, within the prescribed delays, the form showing the harvest return and the undertaking to deliver the product. The regional agricultural credit bank is charged to pay the bonuses on account of the National Inter-Professional Cereal Office, in conformity with a list of producers drawn up by the Communal Committee for collections checked by the Departmental Committee of Cereals.

Decree No. 47-1971 of October 9, 1947 (*J. O.*, No. 240, October 11, 1947, p. 10101) fixes the areas to be sown to wheat and rye in the 1947-48 crop season. They must be at least equal to the average areas returned for the 1937-38 and the 1938-39 seasons, and must not be inferior to the largest area sown to wheat during the aforesaid seasons. In the case of rye, the farmers are required to sow during the same season an area not less than 125 % of the average areas returned for their farms during the 1944-45 and 1945-46 seasons. Any reduction of the areas sown to rye may, however, be offset by a corresponding increase in those sown to wheat. A reduction of the tax on agricultural profits is

provided by the decree in the case of areas sown to wheat and rye. On the other hand, any farmer who has not provided for sowing the aforesaid crops in the prescribed measure is liable to a fine of 10,000 francs for each hectare short of the required number.

A Decree of October 17, 1947 (*J. O.*, No. 250, October 23, 1947, p. 10463) amends art. 3 of the Decree of April 23, 1947 relating to the baking and sale of bread (see: *Review No. 1*, p. 71). Consequently, it is forbidden to bake (a) long loaves (*longuets*), *grissini*, *bretzel*, special kinds of bread and new or stale breads for special diets made in factories or by small bakeries; (b) the manufacture and sale of biscuits by small bakeries. The baking and sale of rusks (*pain biscotté*) and the sale of bread for making rusks continues to be forbidden.

POLAND

A Decree of the Minister of Supplies and of the Minister of Commerce and Industry of July 30, 1947 (*D. U. R. P.*, No. 56, August 28, 1947, Text 305, p. 914) restricts the trade in pastries. All sale of pastry (*patés*, tarts, cakes, fritters, etc.), by industries engaged in the preparation of cooked food and by the hotel industry is forbidden on Tuesdays, Wednesdays, Thursdays and Fridays of each week. (The two industries above mentioned are defined respectively in art. 2 of the Decree of November 30, 1945, and in paragraph 1 of the Decree of September 1938). Their sale is also forbidden in provision shops, licensed victuallers, etc. The Decree does not contemplate gingerbread, nor little rolls containing not less than 80 % of wheat flour without the addition of fats, sugar, or milk. The provincial authorities (*voivodes*) may alter the days on which the sale of pastries is forbidden.

UNITED KINGDOM

An Amendment, dated February 10, 1947 (*S. R. & O.*, 1947, No. 231), has modified The Flour Confectionery (Control and Maximum Prices) Order, 1946 (*S. R. & O.*, 1946, No. 418). This Amending Order: (1) expressly excludes black puddings and white (or mealy) puddings from the definition of flour confectionery; (2) provides a new method of ascertaining the maximum price of flour confectionery where some or all of the ingredients are supplied by the purchaser; (3) increases the ceiling price of flour confectionery from 1s. 6d. to 2s. 6d. a lb. (where specified conditions as to ingredients are fulfilled), while at the same time reducing the ratio of maximum price to ingredient cost where 1s. 6d. per lb. is exceeded; and (4) increases the maximum price of uncooked pastry from 9d. to 1s. 0d. a lb.

The Flour Order, 1947, dated March 28, 1947 (*S. R. & O.*, 1947, No. 548), consolidates, with

amendments, *The Flour Order*, 1945, and its amending Orders (*S. R. & O.*, 1945, Nos. 1, 1149 and 1347; 1946, Nos. 249, 545, 1155 and 1536). The principal changes are: (1) Sales of flour to institutions are included in the definition of "Sale by retail"; (2) The prices of semolina (except the maximum retail prices of semolina that is not pre-packed) are raised; (3) The prices of flour on sales by millers or importers to other persons for export are raised; (4) Prices of flour are prescribed on export sales by millers or importers, but no prices are prescribed on export sales by other persons; (5) The price of home-produced wheat germ is raised; (6) The permitted additions to the prices of flour for returnable bags and sacks are raised; and (7) The permitted deductions from prices of flour for carriage are extended to sales of flour for export.

(b) Meat and fish.

BELGIUM

The Ministerial Decree of December 15, 1947 (*M. B.*, No. 353, December 19, 1947, p. 11757) orders a census of the products held by meat canners and preservers on January 1st, 1948. All persons holding a license for preparing meat products must make a return for (1) stocks of meat not processed (2) stocks of meat processed; (3) the number of stamps or A authorizations they hold.

POLAND

The Decree of the Minister of Supplies and of the Minister of Commerce and Industry of July 30, 1947 (*D. U. R. P.*, No. 56, August 28, 1947, text 306, No. 914) restricts the trade in meat, meat products, and animal fats. Meatless days are Wednesday, Thursday and Friday of each week; on those days meat and meat products (prepared dishes, sausage meat, canned meats) and animal fats obtained by slaughtering livestock (bacon, lard, suet, etc.) may not be sold or served in restaurants, inns, provision shops, licensed victuallers, etc. The prohibition does not apply to offal and bones, nor to meat dishes, fats, or viands prepared with poultry, rabbits, or game. On the other days of the week each person may be served one dish of meat only, of a maximum weight of 100 grams. In restaurants and inns the bill of fare must be posted up in a visible place showing the meat dishes (not more than 4) on sale. The Decree specifies that the slaughter of livestock and the carriage of the products may take place everyday in so far as this is not restricted by other regulations. On meatless days meat and meat products must be kept and handled on premises not open to the public. The provincial authorities (*voivodes*) may substitute other meatless days

for those prescribed in the Decree, should this be advisable for general reasons. Lastly, the Minister of Supplies is empowered to allow the sale of meat and meat products and of pork even on meatless days during the hot season.

UNITED KINGDOM

In exercise of the powers conferred upon him, the Minister of Food has made The Meat Products and Canned Meat (Control and Maximum Prices) Order, 1947, dated March 28, 1947 (*S. R. & O.*, 1947, No. 162). This is a consolidating Order which substantially re-enacts The Meat Products and Canned Meat (Control and Maximum Prices) Order, 1946, as amended (*S. R. & O.*, 1946, Nos. 135, 1727 and 2046). The following are the principal changes in the Order: (1) the maximum prices of beef sausages and pork sausages in hog casings are increased by ½d. per lb.; (2) the Order extends to home-packed canned specified foods delivered to certain areas in Scotland, the additional charges previously permitted only in respect of imported canned meat; (3) the restriction on labelling specified foods canned for sale to the Minister of Food has been removed.

An Amendment, dated March 28, 1947 (*S. R. & O.*, 1947, No. 545), makes various changes in the above Order. The following are the principal changes: (1) fat of vegetable origin will count as part of the meat content of beef sausages, beef sausage meat, and beef slicing sausage, if it does not exceed 25 per cent. of the total prescribed minimum meat content of the product; (2) the maximum wholesale and retail prices of imported Salami sausages are increased to 4s. 2 ½d. per lb. wholesale and 5s. 0d. per lb. retail; (3) the maximum prices of meat paste sold in 3oz. tins are increased to 3s. 5 ½d. per dozen tins wholesale and 4 ½d. per tin retail; (4) the maximum prices of most varieties of imported canned meat are increased. There are also increases in the maximum retail prices of various kinds of imported canned meat when sold in slices.

An Amendment, dated May 7, 1947 (*S. R. & O.*, 1947, No. 858) has modified the Bacon (Control and Prices) Order, 1944 (*S. R. & O.*, 1944, No. 164), by reducing as from 25th May, 1947, all fixed wholesale and maximum retail prices of bacon; the retail price reduction varies for different cuts but is in most cases 4d. per lb.

An Amendment No. 3, dated February 24, 1947 (*S. R. & O.*, 1947, No. 330), amends The Poultry (Control and Maximum Prices) Order, 1946, as amended (*S. R. & O.*, 1946, Nos. 1458 and 1989). This amending Order requires persons buying poultry by wholesale to purchase only from the holders of wholesale licences granted under Art. 7 of the principal Order, or of a packers' licences granted by the Ministry of Agriculture for Nor-

thern Ireland. It limits the payment which may be made for packages on a purchase of poultry from a packer in Northern Ireland to the cost of providing returnable packages and allows the maximum prices of poultry to be increased by 2d. per lb. in the case of poultry sold in certain areas, or sold at first-hand or by wholesale in other areas and delivered by the seller to the premises of the buyer for re-sale by the buyer. The amending Order prescribes 2nd March, 1947, as the appointed day for the purpose of Article 11 of the Principal Order. On and after that date dealers in stock poultry must hold licences from the Minister of Food.

The Poultry (Control and Maximum Prices) (Northern Ireland) Order, 1947, dated March 31, 1947 (*S. R. & O.*, 1947, No. 598), applies only to Northern Ireland. Its general purport is to revoke and substantially to re-enact with amendments The Poultry (Control and Prices) (Northern Ireland) Order, 1946, as amended (*S. R. & O.*, 1946, Nos. 1459 and 1656). The following are the principal new provisions introduced by the Order: (1) packers are permitted to purchase live poultry from other packers and to sell live poultry as well as dead poultry; (2) the Ministry of Agriculture, Northern Ireland, is empowered to give directions to packers as to the grading of dead poultry and the marking of packages or containers; (3) retailers are permitted to ship to Great Britain and the Isle of Man without licence packages of poultry weighing less than 28 lb.; (4) the maximum prices on a sale by wholesale or by retail are subject to reduction in the case of a sale of poultry other than chicks to a person carrying on business in, or resident in, certain areas in Great Britain; (5) the permitted addition to the maximum wholesale and retail prices for kosher poultry is altered from 2d. per lb. for all poultry to 2 ½d. per lb. in the case of chickens, fowls, ducklings or ducks and 1 ½d. per lb. in the case of turkeys, geese, and goslings.

The Imported Canned Fish (Maximum Prices) Order, 1947, dated January 27, 1947 (*S. R. & O.*, 1947, No. 136), revokes and re-enacts, with amendments, previous Orders prescribing maximum prices for imported canned fish (*S. R. & O.*, 1946, Nos. 125, 1336 and 2215). This consolidating Order increases the prices of salmon, pilchards, mackerel, crawfish, and sild. It increases from 1s. to 1s. 3d. per case the reduction in the maximum price allowed to a multiple retailer taking delivery at a central depot.

An Amendment, dated April 23, 1947 (*S. R. & O.*, 1947, No. 741), has modified The White Fish (Distribution) Order, 1945 (*S. R. & O.*, 1945, No. 1136), by removing the obligation previously imposed upon coastal wholesalers to offer a minimum proportion of any surplus white fish they may have to inland wholesalers. They will now

be able to sell their surplus white fish to any customer. The Order also removes from inland wholesalers the obligation to offer white fish for sale to registered customers.

An Amendment No. 7, dated May 16, 1947 (*S. R. & O.*, 1947, No. 957), has modified The Fish (Control and Maximum Prices) Order, 1946, as amended (*S. R. & O.*, 1946, Nos. 484, 655, 806, 1322, 1642 and 2210), by increasing the maximum first hand price of fresh herrings by ½d. per stone, and the importer's buying price of kippers from Eire and the Isle of Man by 4d. per stone. The Order also reduces the maximum wholesale prices of fresh herrings (including boned herrings) by 2d per stone.

The Fish Sales (Charges) (Amendment) (No. 1) Order, 1947, dated May 16, 1947 (*S. R. & O.*, 1947, No. 956), reduces from 10 ½d. to 6 ½d. per stone the rate of charge payable in respect of herrings bought on first hand sale on and after 17th May, 1947.

An Amendment, dated April 23, 1947 (*S. R. & O.*, 1947, No. 738), has modified The Food (Licensing of Retailers) Order, 1945 (*S. R. & O.*, 1945, No. 131) by permitting traders to sell by retail wet, cured or dried fish without holding a licence under that Order.

(c) Milk and cheese, eggs.

FINLAND

A resolution No. 783 of October 30, 1947 (*F. F.* No. 783-784 of November 1, 1947, p. 1241) makes amendments in the resolution of November 26, 1946, amended by the resolution of July 29, 1943, and by that of September 30, 1943.

These new amendments make stricter the control exercised over the delivery of milk and pure butter to dairies by the holders of livestock, so as to assure the fair distribution at fixed prices of these essential foods.

Subsequent prescriptions regulate also the retail sale of milk by the dairies.

IRELAND

Act No. 16 of 1947 (*Acts*, No. 16, 1947) makes some amendments in the previous legislation on licences delivered to makers of dairy products.

UNITED KINGDOM

The Amendment No. 3, dated January 3, 1947 (*S. R. & O.*, 1947, No. 17), amends The Milk (Control and Maximum Prices) (Great Britain) Order 1945, as amended (*S. R. & O.*, 1945, Nos. 959 and 1148), by permitting an extra charge of 4d. per gallon to be made on sales by wholesale of milk for supply to schools in one-third pint bottles instead of the ordinary extra charge of 2d. per gallon for

bottled milk on sales by wholesale. Retail prices are not affected.

The opportunity has also been taken to make two minor amendments, namely the re-introduction of certain exceptions to the class of intermediate sales and a clarifications provision as respects sales for ships stores.

The Milk Powder (Maximum Prices) Order, 1947, dated February 7, 1947 (*S. R. & O.*, 1947, No. 217), consolidates with amendments The Milk Powder (Maximum Prices) Order, 1941, as amended (*S. R. & O.*, 1941, No. 1853; 1942, No. 2060 and 1945, No. 196). The principal change is that the prices of skimmed milk powder, other than household milk powder and skim milk powder sold for animal feeding purposes, are increased.

An Amendment No. 2, dated April 21, 1947 (*S. R. & O.*, 1947, No. 715), amends The Condensed Milk (Control and Maximum Prices) Order, 1943, as amended (*S. R. & O.*, 1943, No. 1396 and 1945, No. 196), by increasing the maximum prices for condensed milk.

The Butter (Control and Maximum Prices) Order, 1947, dated March 28, 1947 (*S. R. & O.*, 1947, No. 551) consolidates with amendments the Butter (Control and Maximum Prices) Order, 1943, as amended by *S. R. & O.*, 1943, No. 1765 and 1946, No. 654.

The principal changes are that the price of butter, other than butter sold for manufacturing purposes, is reduced and a special price is prescribed for butter sold for manufacturing purposes, which may only be supplied and obtained against a permit.

An Amendment, dated January 1, 1947 (*S. R. & O.*, 1947, No. 7) amends The Cheese (Control and Maximum Prices), Order, 1946 (*S. R. & O.*, 1946, No. 2109) by specifying maximum wholesale and retail prices for Pont l'Evêque, Brie and Carré de l'Est cheese imported from France.

An Amendment No. 2 to the same Order, dated March 11, 1947 (*S. R. & O.*, 1947, No. 428) reduces the prices of certain varieties of cheese.

The Eggs (Control and Prices) (Great Britain) (Amendment No. 3) Order 1947, dated January 8, 1947 (*S. R. & O.*, 1947, No. 38), amends the *S. R. & O.*, 1946, Nos. 880 and 2039, by providing that the deduction from the fixed price, on a sale by a producer to a licensed packer, where the seller's premises are more than ten miles from the packing station, shall no longer be compulsory but within the discretion of the buyer. Another Amendment No. 4, dated March 25, 1947 (*S. R. & O.*, 1947, No. 525), increases by 1d. per dozen the fixed price payable on a sale of eggs by a producer to a licensed buyer or licensed packer and reduces by 3d. per dozen the maximum prices payable on a sale of eggs of Categories I and II.

The Eggs (Control and Price) (Northern Ireland) Order, dated March 26, 1947 (*S. R. & O.*, 1947, No. 535), applies only to Northern Ireland. Its

general purport is to consolidate with amendments The Eggs (Control and Prices) (Northern Ireland) Order, 1944, as amended (*S. R. & O.*, 1944, No. 247 and 1946, No. 2040). The principal changes are: (1) the price of eggs on a sale by a producer is increased; (2) the conditions relating to the sale of eggs by a producer to a licensed collector or a licensed packer and by a licensed collector to a licensed packer have been modified; (3) eggs supplied for ships' stores are brought within the scope of the Order; (4) the resale of eggs bought for hatching purposes is prohibited except to a licensed collector or licensed packer; (5) the price of eggs on sales other than to a licensed collector or licensed packer or for manufacturing purposes is reduced.

The Egg Products (Control and Maximum Prices) Order, 1947, as amended (*S. R. & O.*, 1946, Nos. 1729 and 2214), is further amended by Amendment No. 2, dated February 22, 1947 (*S. R. & O.*, 1947, No. 327), by increasing all the maximum prices of all egg products and by providing for increase traders' margins on sales of pre-packed egg products.

(d) Potatoes.

UNITED KINGDOM

In exercise of the powers conferred upon him, the Minister of Food has made The Potatoes (1946 Crop) (No. 2) (Amendment No. 3) Order 1947, dated January 25, 1947 (*S. R. & O.*, 1947, No. 132).

By this Order The Potatoes (1946 Crop) (No. 2) Order, 1946, as amended (*S. R. & O.*, 1946, Nos. 1564, 2004 and 2243), is further amended (1) by prescribing revised maximum and minimum whole-sale prices for ware potatoes on and after 1st February, 1947, and revised maximum retail prices on and after 2nd February, 1947; and (2) by cancelling the 2 inch minimum riddle for Grade B ware potatoes operating in certain counties so that the 1 ¼ inch fixed riddle now applies to all ware potatoes until further notice.

By an Amendment No. 3, dated March 10, 1947 (*S. R. & O.*, 1947, No. 420), it is withdrawn, until further Order, the prohibition on the sale, except to the Minister of Food, of certain long keeping varieties of potatoes.

The Amendment No. 6, dated April 19, 1947 (*S. R. & O.*, 1947, No. 702) increased the ware riddle to 2 ¼ inches for once-grown stocks of certain varieties grown in certain counties of England.

By a further Amendment No. 8, dated May 1947 (*S. R. & O.*, 1947, No. 927), the above 2 ¼ inch riddle has been withdrawn so that now the 1 ¼ inch riddle applies to all ware potatoes.

A previous Amendment No. 7, dated April 22, 1947 (*S. R. & O.*, 1947, No. 723) prescribes for ware potatoes increased maximum and minimum whole-

sale prices on and after 3rd May, 1947, and increased maximum retail prices on and after 4th May, 1947. The increase on retail prices is 1d. per 7 lb. net. The same Amendment provides a special further addition for ware potatoes sold for delivery in the Inner and Outer Hebrides Islands and the Counties of Zetland and Orkney.

The New Potatoes (1947 Crop) (No. 1) Order, 1947, dated April 10, 1947 (*S. R. & O.*, 1947, No. 639), is to be read as one with The Potatoes (General Provisions) Order, 1944, as amended (*S. R. & O.*, 1944, Nos. 486 and 1095; 1945, No. 1192, 1946, Nos. 329, 1564 and 1785, and 1947, No. 502).

Its general purport is to prescribe maximum prices for new potatoes of the 1947 crop during the earlier part of the season including a maximum price payable by an importer of new potatoes into the United Kingdom. It releases also new potatoes from the transport restrictions imposed by The Potatoes (General Provisions) Order, 1944.

An Amendment No. 1, dated May 9, 1947 (*S. R. & O.*, 1947, No. 877), extends the periods during which the maximum prices already prescribed will operate.

The Potatoes (General Provisions) Order, 1944, as amended (*S. R. & O.*, 1944, Nos. 468 and 1095; 1945, No. 1192 and 1946, Nos. 329, 1564 and 1785), has been further amended by Amendment No. 6 dated March 22, 1947 (*S. R. & O.*, 1947, No. 502). This amending Order increases to 2 ¼ inches the top riddle for seed potatoes of all classifications and varieties except uncertified (English) and uncertified (Welsh) for which the top riddle remains at 2 inches.

(e) Sugar.

FRANCE

A Decree of October 21, 1947 (*J. O.*, No. 249, October 22, 1947, p. 10434) contains measures for increasing the production of sugar on the metropolitan territory. To satisfy the sugar consumption requirements of the 1947-48 season, part of the sugar-beet crop included in distillery supply areas will exceptionally be used for the production of sugar. The Decree provides compensation to meet the additional costs and offset the losses caused by the enforcement of this measure. A special Compensation Fund is set up for this purpose by the national inter-professional group of sugar-beet producers.

UNITED KINGDOM

The Sugar (Control and Maximum Prices) Order, 1943, as amended (*S. R. & O.*, 1943, No. 1596 and 1946, No. 1643), has been modified by two Orders in 1947. The first amending Order, dated March 12, 1947 (Amendment No. 2) (*S. R. & O.*,

1947, No. 442), increases by 1d. and 1 ¼d. a lb. respectively, the maximum wholesale and retail prices of sugar sold for purposes other than domestic consumption; increases by 1 ½d. a cwt. (in addition to the above increase) the maximum wholesale price of sugar sold in bags containing 1 cwt. or more but less than 2 cwt. whether sold for domestic consumption or not; and exempts from the maximum price provisions of the Order sales for ships' stores of sugar attracting drawback.

The second amending Order, dated April 25, 1947 (Amendment No. 3, *S. R. & O.*, 1947, No. 759), further amends the principal Order by reducing by 1d. a lb. the maximum wholesale and retail prices of sugar sold for domestic consumption.

(f) Olive oil.

ITALY

A Decree-Law, No. 1216, of October 29, 1947 (*G. U.*, No. 263, November 15, 1947 p. 3372) regulates the pooling of olive oil during the agricultural year 1947-48.

Under this Decree all the olives gathered in the course of the year 1947-1948, table olives excluded, are assigned for the production of oil, either by the growers or by the operators of oil-mills, who are the only persons authorized to purchase the olives produced.

The oil obtained is blocked and must be delivered to the pools in fixed quotas. The use of the oil for making soap or non-food products is forbidden.

Oil producers are required to assure to the People's Oil Pool a national quota of 75,000 metric tons. As a general rule the obligation to make this delivery rests on the operators of the oil-mills. The Minister of Agriculture and Forests, jointly with the High Commissioner for Food, distributes, on the basis of the estimates of production, the national quota between the several oil producing provinces, net of the quantities allocated for the consumption of the producers and of others entitled thereto. A Special Committee in each province distributes the quota assigned to the territory for which it is qualified to act among the several oil-growing communes and among the persons required to make such delivery to the pools, taking into account not only the estimated production, net of the quantities allocated for the consumption of the producers and other entitled thereto, but also of inter-provincial and inter-communal exchanges.

This Decree contains measures relating to the free disposal of the oil in excess of the quotas to be delivered to the pools.

A Decree of the High Commissioner for Food of November 5, 1947 (*G. U.* No. 272, November 26,

p. 3481) repeals the Ministerial Decree of September 21, 1945 regulating the production and use of seed-oils and of national oleaginous fruits.

PORTUGAL

The Decree No. 12,075 of the Minister of Economy of October 18, 1947, (*D. d. G.*, 1st Series, No. 243, October 18, 1947, 1015) lays down rules regulating the trade in and the marketing of oil, fixes the sale and purchase prices, and repeals Decree No. 11,599 of November 6, 1946. The preamble notes that the forthcoming output, estimated at 75 million litres of oil, will certainly allow of satisfying the needs of the home market and will even make it possible to form essential stocks. Though this justifies the hope that it will soon be possible to terminate the regime of restrictions and reestablish a free market and free consumption with guaranteed prices, it is necessary in the meantime to act with prudence and to limit action to improving as far as possible the system now in force.

As to prices, those paid to the producers, who have been required to make heavy sacrifices, have been slightly raised, especially for the oils of the lower grades of acidity. On the other hand, the retail sale price has been slightly reduced, the margin allowed the middlemen being revised, as they will now be able to do a larger volume of business.

The Decree deals in detail with the control exercised by the National Oil Board through its district delegations. Besides keeping the account of the daily work performed in conformity with the Decree No 31,445 of August 4, 1941, all persons operating a mill or oil-press are required to send in every week to the Board a form filled in with particulars of the lots processed and delivered to the producers, the quantities represented by payments made in kind, the lots processed by the mills on their own account, especially if consisting of olives grown or purchased by them; they must deliver a counterfoil as voucher to the carriers of the quantities of oil they ship to the producers. The Decree extends the obligations incumbent on producers to the owners, lessees, or managers of oil-mills. The oil produced, with the exception of the quantities retained for the personal consumption of those who operate the agricultural undertaking, is disposed of under the supervision of the General Intendancy of Food Supplies, which is also the supervisor of rationing. Should the oil not be sold, the Minister of Economy may requisition it, and assign it, through the medium of the Board, to a warehouseman of his choice. The oil may only be bought by authorized purchasers, *i. e.* warehousemen, or, with the consent of the Board, exporters or refiners, with due regard to the needs of the market and of consumption. The Board receives the returns made by the purchasers and delivers the necessary permits. With due regard to local conditions, it may authorize the sale by

retailers associated to the producers, or even the direct sale by the producer to the consumer. The Board authorizes the transport and purchase of the residue from oil-mills and refineries, and of the oil obtained from the olive-stones; deliveries of refined oil to the fish-packing and preserving factories, on applications approved by the Portuguese Institute for that industry. It purchases, at the official prices, all the oil offered it, and keeps books showing the movement of the oil, based on the data forwarded to it by its delegations, the permits issued, etc. The regulation of consumption and domestic stocks is assigned to the General Intendancy above mentioned which exercises supervision through its municipal delegates, and in their default, through commission for regulating local trade; the system of way-sheets for carriers remains in force. The Decree examines the case in which a mill may be closed under the provisions of the Decree Law of August 16, 1946. Annexed tables show the prices of oil per litre, fixed according to the degree of acidity, for purchase and production, purchase by the retailer, and retail prices in Lisbon which determine the retail prices in other localities. As regards penalties, the Decree refers back to the several Decree Laws of 1939, 1941, 1942, 1943, 1946 and 1947, etc. The General Intendancy of Food Supplies and the National Oil Board give the necessary instructions; and any doubts which may arise are settled by the Minister of Economy.

(g) Vegetables and fruits.

UNITED KINGDOM

An Amendment, dated April 25, 1947 (*S. R. & O.* 1947, No. 757), of The Labelling of Food Order, 1946 (*S. R. & O.*, 1946, No. 2169), exempts fresh fruit and vegetables (other than potatoes) and single toffee apples from the labelling requirements.

An Amendment, dated February 24, 1947 (*S. R. & O.*, 1947, No. 333), has modified The Canned Fruit and Vegetables (No. 2) Order, 1946 (*S. R. & O.*, 1946, No. 1724). This amending Order removes the following canned products, namely (i) beans in tomato sauce; (ii) cooked spaghetti in tomato sauce, and (iii) vegetable salad with mayonnaise from the maximum price provisions of The Canned Fruit and Vegetables (No. 2) Order, 1946. It prescribes also a new scale of maximum prices for canned tomatoes.

In exercise of the powers conferred upon him, the Minister of Food has made The Tomatoes Order, 1947, dated May 2, 1947 (*S. R. & O.*, 1947, No. 822). This Order replaces The Tomatoes Order, 1946 (*S. R. & O.*, 1946, No. 517, as amended by Nos. 1411, 1513 and 1735) The main points of difference between this Order and the Order it replaces are:

(1) New maximum prices are prescribed for both home grown and imported tomatoes at all stages of distribution including the purchase from an overseas sale (the maximum price on an import sale applies *inter alia* at that stage). Price control will cease on and after an 'appointed day'.

(2) Until the appointed day distribution control will operate as in 1946, except that importers of tomatoes are now required to sell their tomatoes to or through the agency of the Northern Imported Tomatoes Association Ltd., or the Imported Tomatoes Association (Southern) Ltd., according to the port of entry, and that first hand sellers of Dutch tomatoes must in the first instance offer them to the Tomato Distribution Association at the port of entry.

(3) As from the appointed day the distribution provisions are modified. Thereafter allocation to retailers is discontinued. Further, as respects general control of distribution at the wholesale stage, in the event of the refusal of tomatoes by a wholesaler's or selling agent's Tomato Distribution Association, they may be offered not only to another Tomato Distribution Association or licensed wholesaler as theretofore but also to any retailer carrying on business within the district of the seller's Tomato Distribution Association.

(4) Transport restrictions are considerably relaxed, but movement out of certain 'deficiency' areas remains prohibited until the appointed day.

Licences issued to grower-wholesalers and grower-retailers under the Tomatoes Order, 1946 are preserved by this Order, but, as from the appointed day, restrictions relating to quantities and price will cease to apply.

'Appointed day' means such day as the Minister of Food may by Order appoint, provided that different days may be also appointed for different purposes and for different provisions of the Tomatoes Order.

(h) Coffee, tea.

UNITED KINGDOM

By an Amendment, dated March 31, 1947 (*S. R. & O.*, 1947, No. 597), The Coffee (Maximum Retail Prices) Order 1946, has been modified. The amending Order raises the maximum retail prices of raw coffee, roasted coffee and coffee mixture pre-packed and otherwise-by twopence a pound.

The Tea (prices) Order, 1947, dated May 12, 1947 (*S. R. & O.*, 1947, No. 892), replaces The Tea (Price) Order, 1946 (*S. R. & O.*, 1946, No. 1460). The datum period on which the current price of tea is to be based is now 1st February, 1947, instead of 1st July, 1940. China and Formosa teas may be sold at the new current price for such teas, and all other teas at fourpence a pound more than the current price for such other teas.

(i) Alcoholic beverages.

FRANCE

A technical committee on wines, dessert wines, sweet natural wines, spirits, brandy, liqueurs, cider and fruit juices, has been set up by the Ministry of Agriculture under the Decree of October 21, 1947 (*J. O.*, No. 262, November 7, 1947, p. 10993). Its duties are (1) to study and propose measures affecting quality policies relating to wines, liqueur wines, sweet natural wines, spirits, brandy, liqueurs, ciders and fruit juices; and (2) to direct and co-ordinate the work of the regional or national committees who deliver certificates of quality.

The technical committee consists of a certain number of representatives of the several Ministries concerned and of the vine-growers syndicates. It may name as its assistants in the capacity of experts, any qualified persons, especially as tasters.

The work of enquiry, research, and control ordered by the technical committee is financed by the regional or national committees who deliver certificates of quality. The technical committee fixed the amount of the financial contribution and the modalities for the management of the funds collected.

A decree of the same date (*ibidem*, p. 10994) provides for the establishment of a National Committee for delivering certificates of quality for dessert wines, vermouth and pick-me-ups based on wine. Certificates of quality are delivered to exporters by a National Committee empowered to examine the quality of the products made on the metropolitan territory and intended for export abroad or for shipment to the territories of the French Union. The Committee is required to judge the quality of these products from the standpoint of their organoleptic characteristics, and by tasting. The products thus passed on, must have been previously certified to come up to the standards required by the legislation in force, as shown by laboratory analyses carried out by the Office for the prevention of frauds

(j) Feeds for livestock.

UNITED KINGDOM

An amending Order, dated February 22, 1947 (*Amendment No. 2, S.R. & O.*, 1947, No. 308), has modified The Feeding Stuffs (Maximum Prices) Order 1946, as amended (*S.R. & O.*, 1946, Nos. 1261 and 1730), by increasing the maximum permitted charge for non-returnable sacks. It prescribes consequential increased prices when feeding stuffs are sold at gross weights, sacks included. The charges permitted for non-returnable sacks, on sales by net weight, are also increased.

Another Amendment No. 3, dated April 10, 1947

(*S.R. & O.*, 1947, No. 638), to the same Order increases the deposit charge which may be made by the seller when, by arrangement with the buyer, feeding stuffs are supplied in returnable sacks.

An Amendment, dated April 21, 1947 (*S.R. & O.*, 1947, No. 716), has modified The Feeding Stuffs (Licensing and Control) Order 1943 (*S.R. & O.*, 1943, No. 1500), by removing the restriction on trading in certain feeding stuffs situated outside the United Kingdom.

In exercise of the powers conferred upon him by Article 22 of The Feeding Stuffs (Rationing) Order, 1943 (*S.R. & O.*, 1943, No. 1493), the Minister of Food has made The Feeding Stuffs (Rationing) (Direction No. 12) Order, 1947, dated April 28, 1947 (*S.R. & O.*, 1947, No. 794), in order to increase the quantity of feeding stuffs which may be obtained against certain ration documents for the months May to September, 1947, inclusive.

These increases are as follows: (i) the unit value of Poultry Balancer Meal for domestic poultry keepers is raised from 1 lb. to 2 lb.; (ii) the number of units of Poultry Food allowed to small poultry keepers is increased as shown in Article 2 of the Order; (iii) the unit value of Balance Meal supplied on a trader's buying permit is raised from 112 lb. to 224 lb.; (iv) the unit value of Poultry Food supplied on a trader's buying permit is raised from 112 lb to 140 lb.

The Hay (Control and Maximum Prices) (Great Britain) Order 1947, dated May 23, 1947 (*S.R. & O.*, 1947, No. 1024), has revoked and substantially re-enacted The Hay (Control and Maximum Prices) (Great Britain) Order, 1946 (*S.R. & O.*, 1946, No. 714). This Order prescribes maximum prices for the years 1947/1948 for old and new crop hay at various stages of sale and for imported hay. The prices for hay in stack or loose remain unchanged but the maximum charges for baling and trussing hay are increased by 2s. per ton and the prices of hay sold baled or trussed are correspondingly increased.

The above Order does not apply to Northern Ireland, for which another Order, dated May 23, 1947 (*S.R. & O.*, 1947, No. 1025) has been made with the same contents.

II. - AGRICULTURE

(a) The organization of agriculture.

AUSTRIA

A Federal Act No. 177, of July 2, 1947 (*D. G. Bl.*, September 1, 1947 p. 815) orders the restoration of the former Austrian legislation on the amalgamation of agricultural and forest immovables (*landwirtschaftliches zusammenlegungsrecht*) and the amendment and completion of the basic Act of August 2, 1932 (*B. G. Bl.*, No. 256) relating to the organi-

zation of the work for the restriping of parcels of land (*Flurverfassungsgrundsatzgesetz*).

Under this Act, all the legislative measures issued since March 13, 1938, by Germany relating to the transformation (*Umlegung*) of agricultural and forest immovables are repealed. At the same time the provisions contained in the Federal Act of August 2, 1932, relating to the organization of lands as affecting the amalgamation of agricultural and forest immovables come again into force.

As the procedures for conversion under German law have not yet come into force, measures will have to be taken for the amalgamation of immovables.

With a view to encouraging the restriping of parcels of land, the provincial legislation has been authorized to issue measures in addition to those contained in par. 49 of the Federal Act of August 2, 1932, in those cases in which it would be possible to improve the conditions of the estate and of the operation of limited number of agricultural immovables or of mines, by setting aside or improving a confused state (*Gemengelage*) by restriping the estates and enclosing within their area other parcels of land, by forming profitable immovables, by rounding off properties, or by setting up collective economic installations (*gemeinschaftlichen, wirtschaftlichen Anlagen*).

On request, the agricultural authorities may start proceedings for the restriping of parcels of land, provided that the preliminary conditions required for starting proceedings for the amalgamation of holdings on a more extensive territory are not contained in the first chapter of the Act of August 2, 1932. The proceedings in question may also be extended officially to include immovables not comprised in the request, should this be necessary in order to secure the desired restriping and amalgamation of the lands and the creation of collective economic installations.

A Federal Act of July 2, 1947 No. 178 (*B. G. Bl.*, September 1, 1947) on the procedure relating to agricultural authorities, provides that all the regulations decreed by Germany since March 13, 1938 cease to have force of law.

The provincial agricultural Senates, and in urgent cases, the presidents of those institutions, may, at their discretion prescribe the desirable or necessary simplifications of the procedure laid down by the provincial laws on this subject so as to assure its rapid application. But such simplifications must not in any way reduce the right of appeal provided by the Acts, nor injure the rights of third parties.

A Federal Act, No. 179, of July 2, 1947 (*B. G. Bl.*, September 1, 1947) amends the provisions of 1937 relating to the organization of the agricultural authorities.

POLAND

The decision taken by the Minister of Agricultural and Agrarian Reforms of November 25, 1947 (*D. U. M. R. i. R. R.*, No. 13, December 20, 1947, text 111, p. 247) relates to the Agricultural Scientific Council, set up at the Ministry of Agriculture and Agrarian Reforms as an advisory and consultative body to take the requisite initiatives in agricultural scientific research work and its application to the national economic plan, and for coordinating the several activities and supervising the execution of the research plans by the several agricultural scientific institutes. The Council will undertake basic work of a scientific character related to the economic and social needs of the country; it will give its opinion on matters affecting the studies and systems of work of scientific organizations placed under the Ministry of Agriculture, such as institutes, experiment stations, etc.; it will report on the Government estimates for the chapters of the budget referring to the matters on which it is qualified to speak and on appointments to the chief vacancies in the said institutions; it will inform on the ways and means available for utilizing scientific works in practical agriculture and on the need for publications; it will assure the scientific use of practical results that have been secured; it will propose innovations and improvements to be introduced into medium and higher agricultural teaching, etc.; lastly, it will undertake, at the request of the Minister, the study of special scientific questions.

The Council consists of representatives of science and practice appointed by the Minister of Agriculture; members nominated by that Minister at the request of other Ministers (Education, Supplies, Commerce and Industry Reconstruction) and on the proposal of the Central Planning Office, and of the Peasants' Mutual Aid Union. The members are appointed for a term of three years. The Minister of Agriculture, who presides over the Agricultural Council, appoints his Deputy. The Minister, his Deputy, and five other members of the Council nominated by the Minister form the Presidential Bureau. The President calls a meeting of the Council at least twice a year and whenever the need is felt. The date of the meeting and the agenda are notified not less than 10 days in advance. All resolutions are passed by a majority of votes. The voting is public but a secret ballot can be taken at the request of any one member of the Council. In view of its special duties the Council may appoint Committees of which a member of the Council is chairman, on which persons foreign to the Council may be asked to sit who are appointed by the Presidential Bureau of the Agricultural Council on the proposal of the President of the Committee. The Committees meet when necessary; notice of their meeting is given 10 days in advance to the

Presidential Bureau of the Agricultural Council to which the protocols and resolutions of the Committees must be communicated. A secretariat, whose organization is placed under the Ministry of Agriculture, works by the side of the Presidential Bureau. The members of the Council and of the Committees receive for each meeting fees fixed by the Minister. They may receive travelling expenses and compensation for displacement costs incurred in the exercise of their functions; special regulations apply to those members of the Council who are government officials. Moreover, the members of the Council and of the Committees may also receive fees for the study of special questions made at the request of the Council or of a Committee.

UNITED KINGDOM

The Agricultural Act of 1947 (*Law Report, November 1947, Part III, chap. 48, p. 1049*) deals first of all with guaranteed prices and assured markets which the Government intends to provide for farmers. A periodical review of the economic conditions of agriculture is assured in which the representatives of the producers will be consulted. Prices will be fixed in good time to enable farmers to plan ahead. Should any quantitative limitation restrict an assured market the limitation will be accompanied by a review of the price factor.

The Government has powers to secure good estate management and good husbandry. The owner is required to attend to the maintenance of the fixed equipment of the farm, to provide new equipment and the improvement of what is there already. The Minister for this purpose may make a Supervision Order, giving him powers of inspection and the right to give directions for improvements, and should the landowner fail to comply with these requirements, the Minister may purchase the land compulsorily. He may also dispossess the occupier of a farm and let the land to another tenant. Both the landowner and the tenant may however appeal against the decisions of the Minister to the local Agricultural Land Tribunal consisting of three members of whom the Chairman is a barrister appointed by the Lord Chancellor, the two others being appointed by the Minister to represent the interests of farmers and owners.

The Minister has also power to act as to the use to which the land is put, giving specific directions to the occupiers of any agricultural land as to the produce for which it is used, subject to an annulment by a resolution of either House of Parliament.

As regards the relations between owners and tenants, the Act provides that when the landowner has carried out improvement at the direction of the Minister he is entitled to have the rent increased by an amount equal to the increase of the rental value attributable to the improvement. On the other hand, should the landowner refuse to carry out certain improvements, the tenant may appeal

to the Minister and make them with his consent, when he is entitled to compensation from the lessor in an amount fixed by the Minister himself. The power to issue certificates of bad husbandry entitling an owner to give notice to his tenant to quit without having to pay him compensation for disturbance, is conferred by the Act on the Minister instead of as formerly, on the Agricultural Committees. Either party may appeal to the Agricultural Land Tribunal against a decision to grant or refuse a certificate. On his side, the tenant may appeal to the Minister in cases of notice to quit with compensation for disturbance.

(b) Assistance to farmers.

ITALY.

A Decree-Law No. 1345 of September 5, 1947, (*G. U., No. 281, December 6, 1947, p. 3612*) encourages the increase of the cultivation of the olive tree by empowering the Minister of Agriculture and Forests to make persons who, prior to April 15, 1947, have purchased olive-slips from nurseries and planted them during the current agricultural season, a grant not to exceed 35 % of the purchase cost, nor 70 lire per slip. This grant does not affect those provided by the Decree of July 1, 1946, No. 31.

The above grants will be taken into account in settling the claims for war damages suffered by olive-plantations.

A sum of 35 million lire has been appropriated in the estimates of the Ministry of Agriculture and Forests for the purposes of this Decree.

A Decree Law of November 7, 1947. (*G. U., No. 276, December 1, 1947, p. 3532*) raises the family allowances and their respective contributions in the case of agriculture, replacing those fixed in the Decree No. 670 of June 13, 1947. In the case of employees, the family allowances and their respective contributions include also those made for the high price of bread, provided by Decrees No. 563 of May 6, 1947 and No. 770 of July 16 of the same year.

(c) Land reclamation.

FINLAND

The Government of Finland by a Decree No. 799 of October 31, 1947 (*F. F., No. 795-802, November 6, 1947, p. 1255*) with a view to encouraging agriculture, has considerably increased the bonuses for land improvement works. These bonuses, which had been fixed to some extent by Decree No. 790 of August 9, 1945 (*F. F., No. 789-791, August 10, 1945, p. 1494*), are granted for works of land clearing and drainage. The aforesaid Decree fixes the bonuses on the basis of the area of the fields

cultivated by the different farms on lands recently cleared, taking into account the cost of the works carried out.

ITALY

In view of the need of carrying out special works to repair the losses caused by military operations or by exceptionally high waters which have damaged the irrigation canals (*canali Cavour*), a Decree Law No. 1207, of October 5, 1947 (*G. U.*, No. 262, November 14, 1947, p. 3355) has authorized an expenditure of 85 million lire by the Ministry of Finance.

A Decree Law No. 1276, of September 30, 1947 (*G. U.*, No. 273, November 27, 1947, p. 3490) amends art. 73 of the single text No. 1775 of December 11, 1933, relating to waters and electric installations. This Decree raises the facilities granted to persons who receive concessions for building reservoirs, artificial lakes, or other works for regulating the outflow of public waters. Such persons may obtain, either in the deed making the concession, or under a subsequent deed (a) partial or total exemption of the royalty due for the derivation, apart from the quota due to the local institutions; (b) the power to levy a contribution on the lands that may be irrigated; (c) government contributions with the right to pledge them as guarantee for financial operation for the purpose of the execution of the works.

(d) Crop regulations

FRANCE

A decision taken on November 28, 1947 (*J.O.*, No. 293, December 13, 1947) fixes the percentages of specific purity and the germinating power, known as the percentage of commercialization, of all forage or semiforage seed, beans, haricot beans, lentils, and peas, for sale. These percentages must be revised annually. Should the percentages of commercialization not be reached the purchaser may, at his option, either rescind the contract to the seller's loss and cost, or claim delivery of a larger quantity of merchandise to be agreed on, or to a refunding of part of the price paid.

(e) Stock-breeding.

BELGIUM

The Decree of the Regent of September 22, 1947 (*M.B. No. 323, November 19, 1947, p. 10712*) provides subsidies for improving the breed of pigs, goats, and sheep. Subsidies, for an amount which may not exceed 300,000 francs, are appropriated for organizing prize shows and expert advice for selecting boars for the public breeding stations, and may

be granted to the provinces. The Minister of Agriculture appoints one third of the jury for awarding the prizes, the others being appointed by the provincial organization. Moreover a sum not to exceed 50,000 francs will be granted each year to each of the nine provincial federations associated to the pig-breeding associations to meet the cost of keeping herd-books and for carrying out the instructions given by the Ministry of Agriculture, and also a sum of 1,360,000 francs for assigning prizes for preserving boars, and another of 200,000 francs to those federations that open experiment stations for stock selection. Other grants are provided for the National Federation of native pig-breeders' syndicates, for the national 'The Belgian Great Yorkshire Pig' Society, and for the National Confederation of pig-breeding Societies.

In the case of goats and sheep, grants are provided for the approved provincial federations of the syndicates of breeders of milch goats and ewes and for the National Federation of Sheep Breeders.

The Ministerial Decree of September 22, 1947 (*M.B.*, No. 323, November 19, 1947 p. 10714) fixes the mode of distributing the grants spoken of in the above Decree.

The Ministerial Decree of November 5, 1947 (*M.B. No. 339, December 5, 1947, p. 11298*) lays down general rules for the improvement of horned cattle. Bulls acceptable in the public breeding stations are defined; they must belong to the breed approved for the region by the Provincial Federation of Syndicates of Cattle Breeders; they must be approved by a committee of experts, and be not less than 12 months old on May 15 of the year in which the expert inspection is made. Moreover the person in possession of the bull must be affiliated to the Provincial Professional Union of Bull Owners. For the purposes of inspection, the country is divided into five zones, corresponding to the breeds best suited to each of them. A bull approved for one zone may not be used for breeding in another one. All bulls must be presented to the Committee in whose territory the breeding station is located. The expert committees consist of six members, one third of whom are appointed by the Minister of Agriculture. Their work is regulated by the Breeding Service of the Department of Agriculture.

Owners of bulls must be provided with a register of the number of services, in which will be noted all the particulars required by the Decree. Bulls not presented to the experts or refused by them must be castrated or slaughtered within 15 days of the date of the examination.

The Department of Agriculture fixes the occasions on which prize shows will be held of bulls approved for the breeding stations. In assigning, prizes, the milk yield of the dam is taken into consideration. There are ordinary prizes and regional prizes. Prize shows are also organized for milch cows and heifers.

Infringements of the rules laid down in this Decree render the offender liable to penalties, among which exclusion from participation in the prize shows.

(f) Diseases of livestock.

BELGIUM

The Decree of the Regent of October 15, 1947 (*M.B.*, No 333, November 29, 1947, p. 11079) contains the rules laid down by the Public Health Authorities for foot and mouth disease. In enforcing these measures a distinction is drawn between the focus of the disease (stable and grazing ground where the diseased animal is) and the protection zone (space surrounding the focus for a radius of 300 metres). Animals who are within the focus are held to be 'suspected of contamination', even if they present no symptoms of the disease. Any owner, guardian, or veterinarian who has become aware of a focus of the disease is required to give notice to the burgomaster, stating the number of head affected by the disease or suspected of contamination. The Burgomaster informs the Government Veterinary Inspector and the police. The animals affected will be sequestered, and in certain cases determined by the Minister of Agriculture will be slaughtered. The owner is entitled to compensation. Measures for disinfection will be taken both by the owner and by neighbouring breeders. Access to the zone infected by foot-and-mouth disease will be forbidden to persons and animals not belonging to the farm or breeding station. The danger will be notified by posters posted up by the Burgomaster. Should the disease appear in an animal bought less than 12 days before, the owner is required to report the name of the seller and the place occupied by the animal since the purchase. The protection zone will also be signalled by posters, and a census will immediately be made of the animals within the zone (ruminants and pigs). They may not leave the zone. The vaccination of ruminants and pigs against foot-and-mouth disease is compulsory in the communes notified by the Minister of Agriculture.

An animal suspected of contamination ceases to be so if, within a period of 12 days, no symptom of the disease has appeared. The measures taken in the case of a focus of foot-and-mouth disease cease six weeks after notice of the disease has been given.

Written notice of any decision on this matter must be served by the Burgomaster on the parties concerned. In those cases in which the animals had to be slaughtered, replacement may only be authorized twenty days after the infected area has been disinfected. In protection zones the measures taken by the Health Officers cease fifteen days after the termination of the vaccination against foot-and-mouth disease.

Dairies in the region in which there has been an outbreak of foot-and-mouth disease may be closed, and the pasteurization of the milk will be controlled.

The Ministerial Decree of October 20, 1947 (*M.B.*, No. 333, November 29, 1947, p. 11085) provides for the enforcement of the above Decree, and prescribes the details arising from the legislative measure just quoted.

(g) Measures affecting landed property.

NETHERLANDS

The Act of July 11, 1947 (*Stbl. No. H 241, August 8, 1947, p. 1*) provides for the allocation of immovables with a view to facilitating reconstruction. While awaiting a final settlement of compensation for war losses, the Decree empowers the Minister of National Reconstruction and Housing to assign to the parties to whom compensation for expropriation is due, an immovable belonging to the person in whose name the expropriation was made (*i. e.*, the person who benefitted thereby), or else to assign him real rights on the said property. Should the property thus allocated belong to a Commune, the consent of the Communal Council must be obtained; article 212 (1) par. 1, and article 213 of the Act on Communes are applicable by analogy. Like powers belong to the Minister in those cases in which the expropriation has been made by the Government Commissioner for Reconstruction, the General Delegate for Reconstruction and for the Building Industries, or his deputy, under a Decree (No 30 of 1942) on occupation losses, etc. The Minister represents the party for whose benefit the expropriation was made; no assignment is made if it is not acceptable to the person for whom it is intended. The Minister may delegate his powers to another person who will act under deeds drawn up by a notary public which will show that both the owner and the assignee have given their consent. The Minister fixes the value of the property assigned, and decides how any difference between the value of the property assigned and that expropriated may be paid or credited in account. He may take a new mortgage on the property assigned in favour of mortgage creditors and when doing so will determine the rank of the mortgage. Article 171 of the Act on Communes, the Act of August 29, 1848 as amended in 1937, the Order of the Commissioner of the Reich of October 4, 1940, on the alienation of National property and on the transactions relating to such properties, are not applicable. The deeds drawn up for the purpose of applying the Act are exempt from stamp and registration duties. No costs are charged for the steps taken at the Registrar of Mortgages and the Land Register. The Act came into force the day after its publication and will remain in force until July 1, 1948.

III. - ECONOMIC AFFAIRS

(a) Price control.

UNITED KINGDOM

A number of Orders made by the Minister of Food, in exercise of the powers conferred upon him, increases the maximum prices the of following products: sweet oranges, bitter oranges and grapefruit by The Citrus Fruit (Amendment No. 3) Order 1947, dated January 2, 1947 (*S.R.&O.*, 1947, No. 11); edible dried beans, yellow split peas and split lentils by The Pulse (Control and Prices) (Amendment No. 5) Order 1947, dated January 21, 1947 (*S.R.&O.*, 1947, No. 110); oatmeal, oat flakes and oat flour by The Oat Products (Control and Maximum Prices) (Amendment No. 4) Order, 1947, dated March 26, 1947 (*S.R.&O.*, 1947, No. 536); macaroni, spaghetti, vermicelli, noodles and any other similar products by The Products (Control and Maximum Prices) (Amendment No. 3) Order, 1947, dated March 28, 1947 (*S.R.&O.*, 1947, No. 546); West African raw cocoa beans by The Raw Cocoa (Control and Maximum Prices) (Amendment) Order 1947, dated March 28, 1947 (*S.R.&O.*, 1947, No. 552); whole rice, ground rice and rice flour by The Rice (Control and Maximum Prices) (Amendment) Order, 1947, dated March 28, 1947 (*S.R.&O.*, 1947, No. 553); jam and marmalade manufactured in the United Kingdom, fruit curd and mincemeat by The Preserves (Amendment No. 9) Order 1947, dated April 24, 1947 (*S.R.&O.*, 1947, No. 755); soya flour by The Soya Flour (Control and Maximum Prices) (Amendment No. 2) Order, 1947, dated May 7, 1947 (*S.R.&O.*, 1947, No. 860); imported honey by The Preserves (Amendment No. 10) Order, 1947, dated May 9, 1947 (*S.R.&O.*, 1947, No. 878); currants and sultanas, dates, figs, muscatels, raisins, dried plums or prunes, dried apples, apricots, nectarines, peaches and pears by The Dried Fruits (Control and Maximum Prices) (Amendment No. 5) Order, 1947, dated May 20, 1947 (*S.R.&O.*, 1947, No. 987).

An Amendment No. 2, dated April 23, 1947 (*S.R.&O.*, 1947, No. 739) amends the Imported Apples Order 1946, as amended (*S.R.&O.*, 1946, Nos. 1466 and 1553), in respect of Group 3 apples, by continuing after the 26th April, 1947, the range of maximum prices in force from the 16th February, 1947, to the 26th April, 1947.

The Bananas Order, 1945, as amended (*S.R.&O.*, No. 1551 and 1946, No. 347) has been modified by two amendments. The first amending Order, dated January 8, 1947 (*Amendment No. 2, S.R.&O.*, 1947, No. 37) prescribes higher maximum prices on sales by wholesale and by retail in the Inner and Outer Hebrides and the Countries of Orkney and Zetland. The second amending Order, dated April 23, 1947 (*Amendment No. 3, S.R.&O.*, 1947, No. 740) prescribes lower maximum prices for bananas at each stage of distribution.

The Nuts Order, 1945 as amended (*S.R.&O.*, 1945, No. 757 and 1946, No. 1514) has been modified by *Amendment 2*, dated January 18, 1947 (*S.R.&O.*, 1947, No. 93). This amending Order releases from price control walnuts in shell (other than imported fresh walnuts which were released by an earlier Order).

(b) Control of foreign and home trade in general.

BELGIUM

The Act of September 5, 1947 (*M.B.*, No. 326, November 22, 1947, p. 10820) provides that apart from customs' duties some goods are subject, at the time of importation, to an excise duty reckoned on the basis of an annexed table. Such goods are: canned milk and milk preserves, cream, malt extracts, sugar and sweets, cocoa, chocolate, some flour and bakery products, some vegetables and fruits, jams and beverages. In most cases two bases are provided for calculating the excise duty, the sugar content or the alcohol content of the products listed.

This Act will come into force three months after the ratification of the customs agreement between Belgium, Luxembourg, and Holland, signed on September 5, 1944, and followed by the protocol of March 14, 1947. This agreement and this protocol have been approved by the Act of September 5, 1947 (*M.B.* No. 326 November 22, 1947, p. 10812).

The Decree of the Regent of December 23, 1947 (*M.B.* No. 359, December 25, 1947, p. 11901) amends the customs' tariff.

CZECHOSLOVAKIA

The Decree of September 17, 1947 (*St. z. n.*, No. 82, October 13, 1947, text 170, p. 907) deals with the organization and conduct of foreign trade with a view to securing the aims of the two year economic plan. The Minister of Foreign Trade will take measures gradually, and as may be found advisable, for centralizing the imports of the several descriptions of goods. Among the goods centralized, besides metals and ores, are raw cotton, cotton waste and yarns; raw sheeps' wool scoured or greasy, or combed, or woollen yarns; flax, hemp, jute, raw or retted, streaks and waste; natural and artificial silk and synthetic fibres; raw hides; vegetable tans and their extracts and artificial tans; rubber, natural, synthetic, and regenerated; raw phosphates; potash for fertilizers; cocoa beans; oil fruits, fatty oils and fats; etc. The Minister may extend centralization to other groups of merchandise with due regard to the needs of industry, should the execution of the plan require it, except in the case of products subject to Government Monopoly; it may also, should it deem it advisable, exclude certain goods from this central-

ization. The Minister will centralize these imports by assigning for each group of merchandise (as above) or for several groups, importers to whom the licences will be assigned. One will be appointed for imports required by the State and national enterprises; one for those required by private enterprises of production, and, if it should be necessary, another for the needs of manufacturing companies. A single importer may, moreover, be appointed for 2 or more of these groups of enterprises, should they agree on the choice of an approved person; and the Minister may, should it be necessary, and with the consent of the Presidency of the Council, appoint other importers for certain imports. The Minister nominates the importers as above in concert with the Ministers concerned with the branch of economy related to the goods to be imported, and with due regard to the interests of foreign trade and of the two year plan. *Pro rata* of her needs, Slovakia is assured a participation in the purchases and imports, both as regards her requirements of merchandise and those of her insurers, bankers, shippers, etc., but without derogating from the principle of the centralization of purchases. The Ministry of Foreign Trade will regulate the activity of the importers which is subject to supervision. It may make control purchases. In assigning import licences, priority will be given to imports required for carrying out the plan; engagements resulting from treaties or commercial agreements will not be affected. The system of licences delivered by the Minister is established for all exports and imports, and the National Bank will continue to provide for the cover of imports and accessory expenses. The Minister will take the measures herein foreseen in conformity with the Presidential Decree of October 27, 1945, on the regulation, management and control of foreign trade; he must also take suitable measures for assuring the most favourable conditions for exports and will see that exporters are not exposed to under-bidding and unfair competition on international markets.

IRELAND

Act No. 18 of 1947 (*Acts, No. 18, 1947*) regulates the export of the products of agriculture and fisheries. The Minister is empowered to prohibit from time to time or to condition the export of certain products and to take any other measures he may deem necessary. Nevertheless, the Ministerial decision may be annulled by the *Oireachtas*. Export licences will be delivered in the forms prescribed by the Minister. As the case may require, and as the Government may decide, either the Minister of Agriculture or the Minister of Industry and Commerce will have power to take the decisions referred to.

ITALY

Under a Decree Law No. 1211 of October 19 1947 (*G.U., No. 262, November 14, 1947, p. 3357*), 35% of imported foods as fixed by the High Commissioner for Food, is blocked at his disposal. Food imported by parcel post and sent as a gift does not come under this provision. The exemption is extended also to food imported by any other means provided it be sent as a gift, on condition that its importation has been authorized by the qualified Ministries jointly with the High Commissioner for Food.

PORTUGAL

So as to assure the permanent supervision of foreign trade transactions, and to regulate them duly with regard to national interests of various kinds and so as to facilitate the important decisions the responsible Ministers have to take on matters of commercial policy, the Decree-Law No. 36, 594 of November 20, 1947 (*D.d.G. 1st Series, No. 270, p. 1143*) sets up a Superior Commission on Foreign Trade under the Ministries of Finance and Economy. This Commission is formed of the Vice-President of the Corporative Technical Council, which can delegate one of its Assistants, who is Chairman of the Commission; a representative of the Minister of Finance appointed by the Minister; a representative of the General Direction of the Customs or of the Inspectorate of Banking Trade appointed by the same Minister; a representative of the General Direction of Economic and Consular Affairs appointed by the Minister of Foreign Affairs; and lastly, when colonial matters are under consideration, a representative of the Ministry of Colonies who sits along with the aforesaid permanent members. The Commission attends to: promoting measures necessary for carrying out the decisions of the Council of Ministers relating to foreign trade (*i.e.*, those taken at the meeting of the responsible Ministers); proposing to the Council the provisions of rules for regulating foreign trade transactions, among which the maintenance or suspension of licences for all descriptions of goods and for all countries, which will come into force immediately on publication after approval by the Council itself; delivering the necessary instructions or explanations in connection therewith; collaborating with the National Institute of Statistics in compiling statistical data essential for the direction of foreign trade. The decisions taken by the Superior Commission, if not unanimously approved, must be homologated by the Council of Ministers on Foreign Trade. It will be the duty of the Technical Corporative Committee or of the special bodies set up by the Minister of Economy, to see that the rules and systems thus laid down are observed in conformity with the instruction given by the Superior Commission, to which they must supply any information requested. All public services, corporative or

economic bodies, and undertakings whether collective or not, are also required to respect the said rules and provide the information they may be asked for. The Technical Corporative Council will assure the proper working of the Commission and will supervise the execution of its decisions. The customs' officers will not pass shipments that do not comply with the rules laid down. Infringements of the Decree Law will be ascertained by the Inspectorate of banking commerce, and offenders are liable to fines of not less than 500 and not exceeding 100,000 escudos, besides disciplinary penalties. These latter may be appealed to the Ministries of Finance or Economy, as the case may be.

SWITZERLAND.

The Order of September 30, 1947 (R.L.F., No. 51, December 31, 1947) regulates duties on tobacco. It specifies the customs' duties, excise duty, the duty on cigarette paper, and the rules for pooling tobacco.

THE BELGIAN-LUXEMBOURG UNION, SWITZERLAND, PRINCIPALITY OF LIECHTENSTEIN

An agreement was signed at Brussels on October 13, 1947 between the Belgian-Luxembourg Union and Switzerland. Art. 1 specifies that 'Switzerland' refers not only to the Confederation but also to the Principality of Liechtenstein (R. L. F. No. 51, December 31, 1947, p. 1504).

(c) The wool trade.

IRELAND

The Act No. 27 of 1947 (*Acts, No. 27, 1947*) provides that 'forbidden substances' will be held to include the products used for dipping sheep (against sheep scab) or for branding in those cases in which they might damage the wool. The sale of wool bearing traces of such products is forbidden. The manufacture and sale of products used for dipping sheep against scab is forbidden if they are of a kind which may stain the wool. Public officials will supervise wool-warehouses and the sheep.

ITALY

A Decree Law No. 1286 of November 25, 1947 (*G. U. No. 273, November 27, 1947 p. 3495*) amends the duties on sugar used in the preparation of liqueurs and sweets and for all uses other than direct consumption by the public. The sugar concerned is now subject to an additional duty of 16,000 lire per quintal on sugar of the first class and of 15,360 lire per quintal on sugar of the second class.

This duty is in addition to the excise duty and to the corresponding additional customs' duty levied under Decree No. 278 of May 5, 1947.

The duties levied on sugar products have been similarly amended.

UNITED KINGDOM

The Home Grown Wool Order, 1947, dated May 23, 1947 (*S. R. & O., 1947, No. 1015*), following generally the Orders issued in previous years by the Minister of Supply and the Board of Trade, requires 1947 home grown wool (except Orkney, Shetland and Outer Hebrides wool, fellmongered wool, dagging and clarts) to be held at the disposal of the Ministers and returns to be made accordingly.

IV. - FISHERIES

SWITZERLAND

The Decree of the Federal Council of December 23, 1947, (*R. L. F. No. 51, December 31, 1947, p. 1413*) refers to fishing in the border waters between Switzerland and Italy. On the basis of notes exchanged on October 13, 1947, and December 19, 1947, between Switzerland and Italy, the former conventions have been brought up to date. The Decree deals more especially with the close times which will be fixed by the Fishery Commissioners of the two States.

V - RURAL WELFARE

(a) Social insurance.

ITALY.

The decree-law No. 928 of September 9, 1947 (*G. U., No. 221, September 26, 1947, p. 2851*) modifies the daily rates of indemnities payable under the compulsory insurance scheme against accidents to agricultural workers, such as they were fixed by the Decree No. 85 of February 8, 1946, raising the indemnities for temporary disability up to amounts varying within the range of from 40 to 100 lire, according to the age and sex of the victim. These provisions apply only to accidents having taken place after June 30, 1947.

A temporary cost of living bonus, over and above the indemnities provided for in case of permanent incapacity to work or of death, has been introduced in respect of accidents having taken place after December 31, 1946, such bonus being payable from the day following that of the cessation of the state of temporary incapacity to work or of decease.

The Decree-Law No. 981 of September 9, 1947 (*G. U., No. 226, October 2, 1947, p. 2933*) modifies the rates of contributions in connection with the health insurance of agricultural workers (comprising

farm servants, agricultural labourers, working tenants and share tenants (*mezzadri*). These contributions are fixed in per cent. of the average earnings, as a fixed quota per worker and in accordance with the number of days worked. The same decree modifies also the services provided under the insurance scheme, comprising both the indemnities and the medical assistance in the case of the farm servants and labourers and medical assistance only in the case of tenants and *mezzadri* and of the family dependents of all categories of workers.

SWITZERLAND

The Federal Law of December 20, 1946 concerning old-age and survivors' insurance, has been followed by an executive order dated October 31, 1947 (*R. L. F.*, No. 45, November 13, 1947, p. 1183). This legislative enactment refers to all branches of activity, and in what refers particularly to agriculture it is necessary to mention the determination of the income received in kind by persons occupying a dependent position for the calculation of their contributions. The amount of such income is de-

termined in conformity with the rules adopted for a similar purpose in connection with the law for national defence. In the case of persons whose standard of life is particularly low, the compensation office may reduce the estimated figure by a maximum of 100 francs a year. The Federal Social Insurance Office may also fix special rates for those working in the Alpine districts. In the case of family members working with the farmer, the income must be determined by the compensation office in money, taking into account the special circumstances of the case, as well as the greater or lesser importance of the work performed by the person concerned on the farm.

(b) Rural electrification

FRANCE

Under a Decree of December 10, 1947 (*J. O. No. 301, December 23, 1947, p. 12337*) an exception is made to the Decree of October 9, 1947, forbidding the pledging of expenditure on the budget of reconstruction and equipment, and authorizing the Minister of Agriculture to pledge 300 million Swiss francs for works of rural electrification.

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